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GAS JOURNAL

LIGHT ✦ HEAT ✦ POWER ✦ BYE-PRODUCTS

[Founded in 1849 as the "Journal of Gas Lighting."]

VOL. CLXX. No. 3241.] LONDON, JUNE 24, 1925. [77TH YEAR. PRICE 1s.

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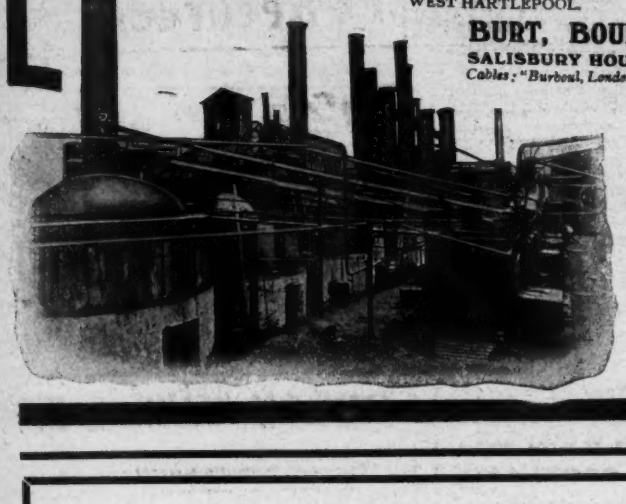

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EDITORIAL NOTES.

Continuous Gas Sampling for Calorific Value Testing.

UNDER the Gas Regulation Act, the Gas Referees have large and highly responsible powers of prescription in respect of gas undertakings working under section 1, in order to assure the supply of gas in accordance with obligations. They can prescribe the places and times at which, and the apparatus and the method by which, tests —whether continuous or intermittent—shall be made. One limitation is that the prescribed apparatus "shall, in the case of any undertakers who have sold in the preceding years more than 100 million c.ft. of gas, and in any other case in which it appears necessary to the Gas Referees, include a calorimeter for the production of a continuous record of the calorific value of the gas which is being supplied." Thus it is seen that all undertakings making below 100 million c.ft. a year may be subjected to ordinary spot tests. This is an undoubted disadvantage to the small gas undertaking; and it was one of the main considerations in the communication which Prof. C. V. Boys, F.R.S., one of the Gas Referees, made to the meeting of the Institution of Gas Engineers. The work that he described is further evidence of the depth of interest the Gas Referees take in the operations of the gas industry within their province, and within the limits of their powers under the Gas Regulation Act. There has been evidence of this before—a desire to be practically constructive and advisory, in addition to exercising the functions relating to prescription. By the way, the prescription of a standard recording calorimeter has not yet been made. The wisdom of the delay is well recognized; but we should not be surprised to hear at any time now that the step can be taken with confidence.

It was not, however, the recording calorimeter that was the subject of the paper by Prof. Boys. It was directed entirely to the requirements of small works. In this regard, there are two matters which have impressed themselves upon the Referees. The first is that, in carrying out their duties, they have been much "oppressed" (we have not observed this, but Prof. Boys says so, and therefore it must be true) by the cost and the elaborate procedure which have grown up round the ordinary water-flow calorimeters, and which make their provision a serious burden in the case of small country places. This, it is said, applies less to the equipment within the testing-place than to the time required by the gas examiner, and the tedious nature of the operation which he has to conduct. To overcome this has not been such a serious matter as is another; and in respect of which up to the present the Referees have not found a solution which can be considered altogether satisfactory. The difficulty is this—to find a value for the average calorific value of the gas supplied when financial considerations unduly limit the number of tests. As Prof. Boys points out, if the number of tests is low, obviously there is a risk that the gas from a small works—of necessity more variable in quality than that to which most of us are accustomed—may be, on the very few occasions of test, caught at an unhappy moment when it is in a state of depression. Tests made at such times and unbalanced by tests made at more favourable times may give an unfair value for the average than has been actually delivered. This condition therefore involves the small undertaking in the constant provision of gas which is of higher value than that declared, in order that it may be safe from an adverse report. This is unjust in comparison with the large undertaking which can work (as experience testifies) very closely to the declared value. What the Referees are aiming at, to the advantage of the small works, is to attempt to introduce continuous automatic sampling of the gas for intermittent testing, so that the small works may have credit for the actual average value of the gas delivered. The idea is not a new one. It has been suggested before in connection with continuous gas sampling apparatus which has been on the market, but which is not admittedly under the similar controlling devices to which Prof. Boys subjects the design upon which he is working for the purpose of official tests of average calorific value in the small works.

How Prof. Boys has worked to reduce the triple burden —on the Gas Examiner, on expenditure, and on the small gas undertaking in regard to the security excess of calorific value—is explained in the paper. He presents and describes a complete equipment, consisting of a "Box" calorimeter, the Boys "Bell" meter, and the continuous sampling holder, with all the accessories. The constructional features do not call for reference here. Suffice it to say that simplicity and ingenuity characterize the complete equipment with the view of realizing the objective of bestowing upon the small undertaking something which will justly meet the needs, and comply with the Gas Regulation Act. Regarding the "Box" calorimeter, it is interesting to note that the water can be used over and over again. The advantages of this will be realized at once. Suitability and constancy of quality of water are requisites; and therefore the plan for re-use removes the anxiety as to doubtful quality, and ensures that the water has the same temperature as the room in which it remains and the air used for combustion. The water circulation is similar to that in the Boys recording calorimeter; and compressed cork is the insulating material. The manner in which Prof. Boys has overcome the radiation difficulty will appeal to those who have made a study of the structural features of calorimeters. From the full description given in the paper of the instrument and its operation, it does appear that the work of the gas examiner will be much curtailed and simplified, and this is what is required in a small works. As to the Boys "Bell" meter, here again a complete study has been made to provide for convenience and certainty. The meter problem in connection with calorimetry has always been a difficulty, and recurring faults have developed; but now (we hope this is well founded) Prof. Boys believes the whole of the troubles were eliminated by him in the meter he designed for the recording calorimeter. Most of the features (there is only one exception) have been incorporated in the "Bell" meter as adopted for independent use. The ease with which the water level can be ascertained and maintained is attractive. In short, even if there were no other grounds of indebtedness, Prof. Boys would have to be heartily congratulated upon the work he has done in this respect alone. From the knowledge of the meter and its working, he claims for it accuracy, convenience, and permanence over the usual form of meter. There is one

precaution which has to be taken. Where the meter is left in a room which falls in temperature, the glass cools more than the water; and this has the effect of completely obscuring the view, and makes observation impossible. Where this occurs, a protecting case should be used.

With regard to the testing of a continuously drawn sample of gas to obtain the average value between one testing and another, this is only at present put forward as a possibility which the Gas Referees could adopt, if found satisfactory, but not otherwise. It will be a considerable advantage if this can be done; and then we should feel that, in the complete equipment, the small works would have a reliable method of having justice done to its gas, and one which would relieve the examiner, and enable him to get through more work—especially when, as is the case in some of the smaller works, the same examiner is engaged by a group of local authorities. A complete test can be made with the "Box" calorimeter in 25 minutes; the gas being burned at the rate of 1 c.ft. per hour. This indicates that in connection with the continuous sampling of the gas, a very small holder will suffice. Another important thing is that for the small works a minimum of cost will be involved by this interesting and ingenious equipment. At the Institution meeting, the appreciation by the gas profession of the work of Prof. Boys found expression in a manner which must have assured him of its perfect genuineness.

Complete Defeat of the Chemical Manufacturers.

The gas industry appears to have to be perpetually on the defensive in respect of their rights, and this not only in regard to the preferential treatment by the Government of their chief competitor—electricity—but in connection with their secondary products. It should be the duty of the Government to see that a statutory industry serving the public, under adequate safeguards for the latter, should be allowed, by the utilization of its own resources, to function with the view of rendering public service with the utmost efficiency and economy. There has latterly been frequent discussion of the position in regard to electricity. To-day consideration must be given—and this can be done with great satisfaction—to the attitude of the chemical manufacturers to our industry. For years the chemical manufacturers have fought with the view of circumscribing the gas industry in its dealings with secondary products. Up to a point they succeeded, by securing (not through the general inquiry that was held) the one-third purchase restriction. That curtailment of power, although at present it has had no real mischievous effect, has always been highly objectionable, because it is a barrier to one of the industry's outlets for possible development in the quest for economies in the interests of the primary commodity and public service. Whatever can be done in the present or the future—perhaps by combined working—ought to be permitted if it is to public advantage. The chemical manufacturers have been making a fresh essay to curb gas undertakings by attacking the Gas Light and Coke Company with a persistency through the Law Courts which, in itself, was sufficient evidence that they meant to succeed in this new effort if argument and money expended on legal costs could win. *Deuchar v. The Gas Light and Coke Company* is how the case will in future be known; but no secret has been made of the fact that Mr. Deuchar was merely representative of a group of chemical manufacturers. When they started on this adventure, it was a big speculation; but they would not have pursued it from the first Court through the Court of Appeal to the House of Lords, had they not had visions of success. But every Court has been against them; the decisions have been unanimous from first to last. Not only so, but the Lord Chancellor (Viscount Cave) and Lords Dunedin, Atkinson, Sumner, and Buckmaster were also unanimous, and were so on the arguments alone of Counsel for the appellant. It is rarely that there is such complete unanimity. Naturally, the chemical manufacturers will not be satisfied with the result; but they must admit that their defeat was complete, and that their interpretation of the powers of the Gas Light and Coke Company was wholly unwarranted and wrong. It has been a costly matter for the chemical manufacturers to prove their error, and that the Company were not acting in contravention of their statutory authorization. We congratulate the Company, and at the same time recognize that the result has not only individual importance, but is of great value to the whole gas industry.

The argument before the Lords of Appeal and the judgments were reported in our last issue [p. 967]. The chemical manufacturers through Mr. Deuchar sought an injunction to restrain the Company from manufacturing caustic soda which they require in the conversion of naphthalene into beta-naphthol. It can readily be seen that, if the application for an injunction had succeeded, the Company would have been compelled to purchase their caustic soda from the chemical manufacturers, and the decision would have been available for application in many other directions—not only by the chemical manufacturers, but by other branches of trading. For example, what would have prevented an electricity supply undertaking applying for an injunction to restrain a gas undertaking from producing its own electrical energy for operating its machinery? If there is efficiency and economy (and so public advantage) in a gas undertaking producing any chemical or anything else for the purpose of its own business as compared with purchase from an outside source, why in the name of common sense should there be restraint? It is easy to see that a big principle was at stake in this case, and one which would have had far-reaching detrimental effects had it gone against the Company. Their Lordships, as the arguments show, fully recognized this. It was all a question of the interpretation of the powers under which the Company operate; and their Lordships agreed that Parliament, in giving the powers to work up secondary products, intended that they should do so in the most efficient and economical manner possible. To hold otherwise would be a distinct obstruction to progress and development. In this connection, the Lord Chancellor quoted, from the case of the *Attorney-General v. The Great Eastern Railway Company*, the view of Lord Selborne: "I agree with Lord "Justice James that the doctrine of *ultra vires* ought to be "reasonably, and not unreasonably, understood and ap-"plied, and that whatever may fairly be regarded as inci-"dental to, or consequential upon, those things which the "Legislature has authorized ought not (unless expressly "prohibited) to be held, by judicial construction, to be *ultra* "*vires*." Their Lordships agreed that the manufacture of caustic soda was incidental to the conversion of naphthalene into beta-naphthol. As to the manufacture of caustic soda by the electrolytic process producing chlorine, and that with caustic soda and chlorine one can make an enormous number of saleable combinations, the Lord Chancellor said the chlorine was a necessary bye-product in the process of making caustic soda, and he regarded it as a small matter. After this complete defeat, perhaps the chemical manufacturers will devote themselves to their own immediate businesses which they are allowed to develop in those ways which will produce the highest efficiency and economy, and leave the gas industry to do the same. The fact that gas undertakings are statutory concerns, while chemical manufacturers are free, should not place upon the former restraints which would be disadvantageous to them and directly advantageous to the latter.

Centenary of Benzene Discovery.

The benefit which the discovery of benzene by Michael Faraday conferred upon the world defies measurement. Words to that effect were used by Lord Balfour at the wonderful centenary celebrations of the discovery held in London last week, when the primates of the scientific world assembled to do honour to one who was a prince in science. The words are true. The discovery has had world-wide effects—in the building of industries, in creating employment, in beautifying life, in increasing the scope of art, in assisting in providing for transport on land and in the air, and in another direction of which much was heard during the terrible four-and-a-half years which succeeded Aug. 4, 1914. Faraday little knew the place his discovery would take in the world's affairs and activities in peace times and in the disturbed periods of war. As Dr. H. E. Armstrong so aptly put it last week, the discovery has proved one of the most fundamental of chemistry. It was only fitting that the gas industry should have had representatives taking part in the celebrations; for it has done much, and is doing it daily, in releasing from coal the elements from which benzene is derived. The work in this

connection of the carbonization industries and of the Benzol Association was referred to by Dr. Armstrong; and among those who heard there are few who know of the magnitude of that work better than Mr. D. Milne Watson, Mr. E. V. Evans, Sir Dugald Clerk, and several of the scientific men—such as Professors Bone, Frankland, and Perkin—whose names are linked in one way or another with the gas industry.

The speeches that were made at the celebrations by the Duke of Northumberland, Lord Balfour, and many distinguished scientists, constitute a perfect gold mine in lessons for the individual and the nation. A new discovery may appear at first blush to be a small thing. Its real value to the world can only be tested and proved by time. A discovery is a germ; it may be one that will have prolific growth, but not till the growth is an accomplished fact can we estimate its true worth. A hundred years away from this discovery, we can look back upon the developed inestimable utilities of benzene; Faraday himself, intellectually brilliant and far-seeing as he was, could not penetrate the hundred years that were to succeed the discovery. He could not have precognition of the further discovery by William Henry Perkin of the aniline colours, the first of which was mauve. Nor could he foresee that his discovery succeeded by that of Perkin would so vastly enrich—not this country, but Germany, through the profound inappreciation by the Government in power when this great contribution was made to the riches of the world. So, however, it was; but that particular lesson from the history of benzene should cause the Government of to-day to give good heed to the products of science in the interests of the nation. Discoveries which indicate the possibility of new industry or the development of existing industry are more worthy of Government encouragement than many other things upon which they set their minds, put their hands, and spend money from the Exchequer. Lost industries are difficult to restore; in this regard no lesson of greater acuteness presents itself than the dye industry, and all it has involved in attempting to establish it on a firm basis in this country. British discovery through research or inventive genius must not again be permitted to pass hence for the foundation of industry in a foreign country to the detriment of this one.

The Duke of Northumberland, at the celebrations, said one of the most distressing features of the times is the failure to link-up scientific discovery and methods with public service. Thankfully we discern a change in this condition, through the Department of Scientific and Industrial Research, the National Physical Laboratory, and the Board of Fuel Research, with Government grants to research in other directions. We are as a nation safeguarding ourselves. But even now it cannot be said that all is being done that should be done. There are complaints that, while there is recognition of a great need for research and of applying its fruits, there is all too little regard for its sufficient support; and big results and parsimony have never gone well together. Before us is spread another lesson in the depressed state of industries and the mass of unemployment, the dimensions of which sometimes give signs of diminishing, and then a reaction sets in, until now unemployment is again working towards a fresh peak in the curve. To help to diminish the severity of movements in industrial activity and in the volume of employment, the foundations and structure of industry require to be developed by greater application to our scientific and research resources. It is a matter of good Government to look well and generously to these factors; and the degree of future national prosperity rests very much upon the measure of which is done in this direction. There are, however, things that appear to be lacking in our scientific and research work to-day; and they are system, co-ordination, and definite objectives. In our research work for the solution of problems and the making of discovery for which the nation pays, we seem to jump from one thing to another with surprising alacrity, and hear comparatively little of the objectives and their realization. There is much work that should be done, and must be done initially, to set in order scientific research with the view of bringing to the country the maximum material results. These may not be immediately attainable; but scientific research carried out for the nation, and financed by it, should be placed in a position impregnable to genuinely adverse criticism.

To return to the celebrations of the centenary of the discovery of benzene, much was said as to the life of Faraday. It was a life devoted to science—science directed to practical ends which have been incalculably beneficial to mankind. Faraday was a modest and devout worker; but the brilliance of his accomplishments made him one of the great luminaries of the scientific world. He could not, however much he tried, divest himself of outstanding distinction and greatness. His life and work are before us for emulation by those who, with scientific attainments and ability, have yet their lives before them. We are grateful for the fact that the gas industry has an important link with Faraday, and we are pleased that the industry has been one of the vehicles through which the benefits of his discovery of benzene has developed so much value in the world. It is interesting to know that a medal is being prepared which is to be awarded without regard to nationality, for outstanding achievements having clear relation with the discovery of benzene. The first recipient of the medal is Mr. James Morton, in special recognition of the signal services he has rendered to science and industry in this country, during the last ten years, by developing and extending the manufacture of anthracene dyestuffs, and more recently by extending their application to silk and wool. The discovery a hundred years ago, and the developments that have been made upon it, have for the country powerful lessons which, if observed, should be bountiful in their results.

The Misfortunes of Coal.

ADVERSITY still obstructs the coal industry; and at present there does not appear even a loophole for escape. The relatively poor exports of coal, particularly to Germany, France, Belgium, and the Netherlands, continue. The position to which things have descended in this regard is well attested by the experiences of the first five months of the year. During that period, over 11 million tons of coal less were sent abroad than in the corresponding period of 1923, and more than 4 millions less than in that of 1924. The actual figures were: 1925, 22,114,598 tons; 1924, 26,248,766 tons; 1923, 33,220,230 tons. In addition to the falling-off in quantity, the values to-day are comparatively low. In the last five months, the total value of the exports, according to the returns, was only £23,143,815. In the same period last year, the value was £32,274,947, and in that of 1923, it was £41,464,651—an enormous drop in revenue for five months. In view of this, and the continued depression in our industries at home, it is not at all surprising that more collieries have been closed, and therefore there is more unemployment in the coal industry, as well as in coal-shipping, and in other sections of its transport.

In face of this, firebrands like Mr. A. J. Cook still talk of what he and others like him will do if they can get the major Trade Unions to follow their communistic flag and directions in the quixotic attempt to get more money for the miners, without in return giving more output to reduce the cost of production, so that a stronger competitive position can be built-up. The economic limits have been passed in many collieries; and the talk of visionaries and extremists will not change them. So much so is this the case (and we are extremely sorry to see it) that the excellent co-operative experiment at the Vauxhall Colliery, near Ruabon, came to an end—much to the regret of the participants—last Wednesday. Solely due to the diminishing price of coal is the fact that the colliery cannot be carried on at the present piece wage rates, which have to be coupled with the severe competition from the coal of other countries. The Resident Engineer at the colliery says that, if the sale price obtained in March had remained unaltered, the colliery would have been working to-day at a profit, and that through the increased exertions of the men. All concerned have been completely satisfied with the results of the experiment; but outside causes prevent its continuance without a revision of the terms. The output per man increased, and consequently the working costs were considerably lowered. It only required maintenance of the prices ruling about three months since to enable this really co-operative effort still to be a success. The colliery owners have made a suggestion to the men. Whether or not they will be able to accept it remains to be seen; but anyway the Company, it is stated, are willing to consider any scheme which the men may themselves put before them, subject to the project being one which would not occasion any loss.

Regarding the inquiry into the economic conditions of the

industry, there were two days' sittings last week of the Joint Committee of the Mining Association and the Miners' Federation. Up to the time of writing, there has been no official announcement as to the results arrived at. There is no mistaking the causes of the condition of the industry; they are as plain as the Houses of Parliament. But now that they have been discussed, the question of what is to be done is a more delicate matter. It was expected by the miners that the inquiry would have assumed a definite form last Thursday; but no positive suggestions were put forward from either side. It was, however, arranged that a further sitting should be held yesterday, when it was hoped that the owners would submit proposals for consideration. The idea is that the Mining Association will suggest something in the nature of longer hours or lower wages. That appears to us a very intelligent prognostication, in view of the fact that it is difficult to see what else they could propose. But, of course, working hours could not be altered without legislation, and by agreement with the miners. The prophets say that, if longer hours or reduced wages is a correct forecast of what the Mining Association will propose, then the miners will launch their new wage programme, and make counter demands, including a wage based on the cost of living. We must "wait and see" what is actually the upshot of the inquiry and discussions. But at the moment, though the indications are clear as to only a single course being open to both sides, one side at all events will (if previous threats are reliable) object to pursue it. If this be so, then the certain thing in store is that matters will go from bad to worse, because no union of labour, however strong, can override economic reverses. What they can do is to work, if they choose, to mitigate them.

Coke Competition.

The Editor of the "Journal" thanks the competitors in the Coke Competition whose papers have already been received. May we remind those who have still to forward their contributions that the latest date for their reception is next Tuesday, June 30?

Speculation and Ignorance.

At the Faraday celebrations last week, Dr. H. E. Armstrong made use of these words: "We are too prone to speculate—often too inconsiderate in speculation—but little alive to our own individual ignorance, too little apt to cultivate that breadth of vision and proportionate judgment which are at the root of scientific method." As we read these words, our mind travels over the advocacy of low-temperature carbonization for the making of gas for the supply of the needs of cities and towns.

Nota Bene.

It is observed that, through the influence of gas engineers and managers in different parts of the country, extracts have appeared in local papers from the Presidential Address of Mr. J. Ferguson Bell to the Institution of Gas Engineers. This is an excellent idea, and advantage should be taken of all possible occasions to obtain similar publicity in all quarters of the country. In one paper before us, the points of the address particularly noticed are the progress of the gas industry in public service, and the discussion as to the intentions of the Government regarding electricity supply.

Gas from Fuel Oils.

A good deal of attention appears to have been directed recently to the production of gas from heavy fuel oils; and it is suggested that this will compete for industrial purposes with town gas. It is more likely that, if fuel oil gas comes along in practicable and commercial form, it will compete not with town gas, but with producer gas. We have lately been hearing of the "Hackol" process (introduced by Mr. J. E. Hackford), in which heavy oils of a specific gravity of ·950 and upwards are used. Much experimenting has been necessary in order to discover a generator which is free from objection. Mr. Hackford believes he has found one, which relies upon the heat of partial combustion to provide a sufficient temperature to crack the oil into gas, and to carry on the cracking indefinitely. It is also claimed that a constant composition of gas is maintained; and that its thermal value is from 155 to 190 B.Th.U. per c.ft. Only a small space is required for the generator. The inventor suggests the possibility of selling the gas at about one-third the price of town gas, and at about 66 p.ct. of the price of producer gas with coal at 24s. per ton. Are these prices based on the respective thermal values? There will be no disturbance in the gas industry over this competitor any more than there has been over the introduction of producer gas. Should a greater demand in consequence grow for fuel oil of the class mentioned, present prices will ascend. It is not only space that counts with manufacturers in preferring to pay more per therm for gas on tap, but the trouble and inconvenience of running and maintaining a plant and storing the gas-producing materials. However, it will be interesting to have the results of working experience with the generator before definitely criticizing it and its performance. There is also reported from the United States an improved method of oil carburetting, which permits oils formerly regarded as fuel oils to be used for gas making. In this system no chequer work is used, but the cracking is effected by the hot refractory lining of the vessel and also the crown of the chamber.

Repetition.

We have had a fresh delivery of the prospectus of the South Midlands and Berkshire Electric Light and Power Company, Ltd. The "Limited" should be emphasized. The Warwickshire and South Midlands Electricity Supply Corporation, Ltd., are still offering, in the South Midlands and Berkshire Company, 9500 8½ p.ct. cumulative participating preference shares of £1 each, the income-tax on which is free up to 4s. 6d. in the pound; also 1000 7 p.ct. (guaranteed) first mortgage debentures at £98 p.ct. in multiples of £10 each. This is the undertaking which proposes to acquire a controlling share, debenture, and administrative interest in the Eynsham Gas Company, Ltd. It is intended "to instal electric light in conjunction therewith;" leaving gas to look after the heating, cooking, and power for the district. We are glad to see that these 43, Cannon Street, people are mindful of the advantages of using coke for steam-raising for the generation of electricity. But the title of the Company, the capital, the report of the Auditors, Turner & Co., and much else are an insult to people of ordinary intelligence. We hope there are not many below normal intelligence who will be persuaded to invest in the concern. The mention of the Warwickshire and South Midlands Company reminds us of the Barford inquiry, in which Turner particularly cut such a melancholy figure; and he and the prime mover, Eaton, thought fit not to be present at the second day's proceedings [see *ante* p. 445].

FORTHCOMING ENGAGEMENTS.

[*Secretaries of Gas and Kindred Organizations are asked to assist in making this diary of events as complete and useful as possible by sending the earliest intimation of all meetings.*]

June 26.—Waverley Association of Gas Managers.—Annual meeting at No. 129, Princes Street, Edinburgh. There will be an address by the President (Mr. R. Taylor, of Aberlady), and a paper on "Gas Ovens," by Mr. Arthur Forshaw, M.Sc., Chief Chemist to Messrs. R. & A. Main, Ltd. Luncheon and an afternoon drive and steamer cruise are included in the programme.

June 30.—Last Day for Coke Competition Papers.

July 9.—Coke Oven Managers' Association (Midland Section).—Visit to the works of Messrs. Stainby and Lyon, of Knottingley.

July 20-25.—Royal Sanitary Institute.—Congress at Edinburgh. H.R.H. the Duke of York has accepted the Hon. Presidentship of this Congress, at which Sir John Gilmour, Bart., Secretary for Scotland, will preside, and deliver the Inaugural Address. A health exhibition is to be held in connection with the Congress.

Sept. 15-17.—Irish Association of Gas Managers.—Annual Meeting in Belfast.

Oct. 19-21.—British Commercial Gas Association.—Annual Conference and General Meeting in Plymouth.

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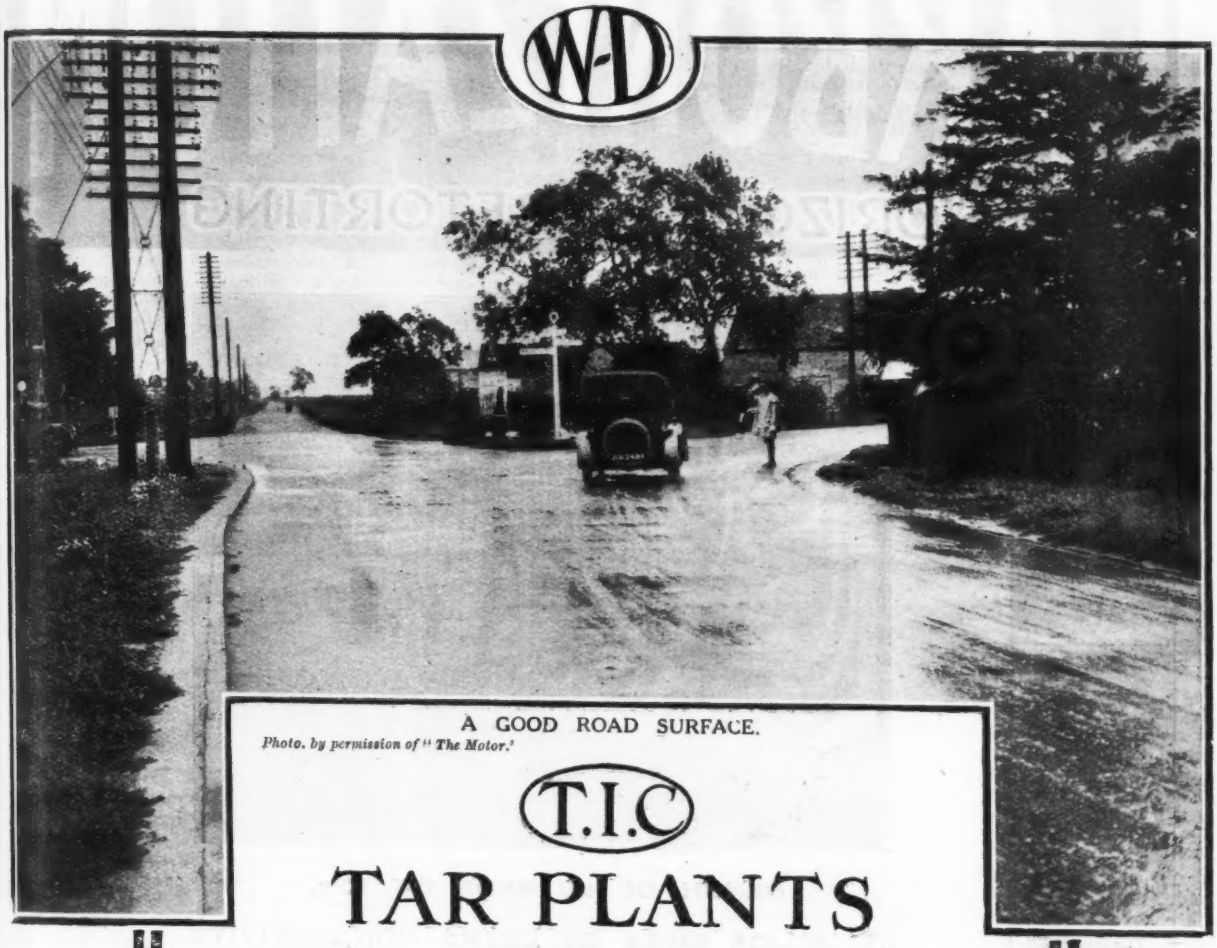

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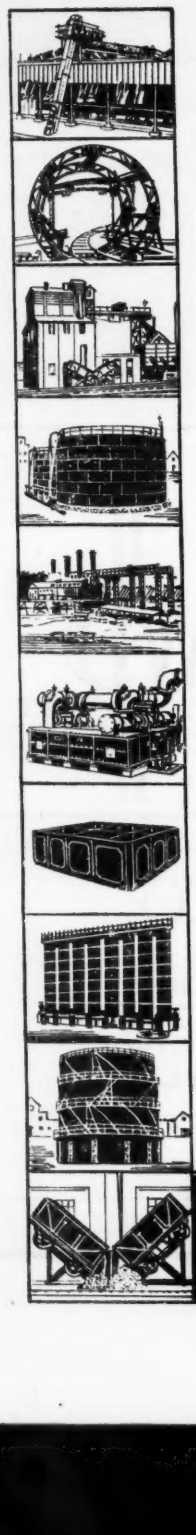

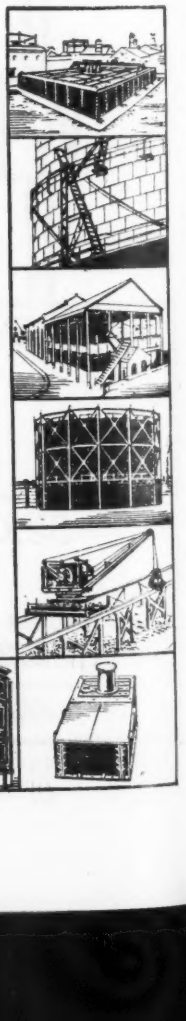

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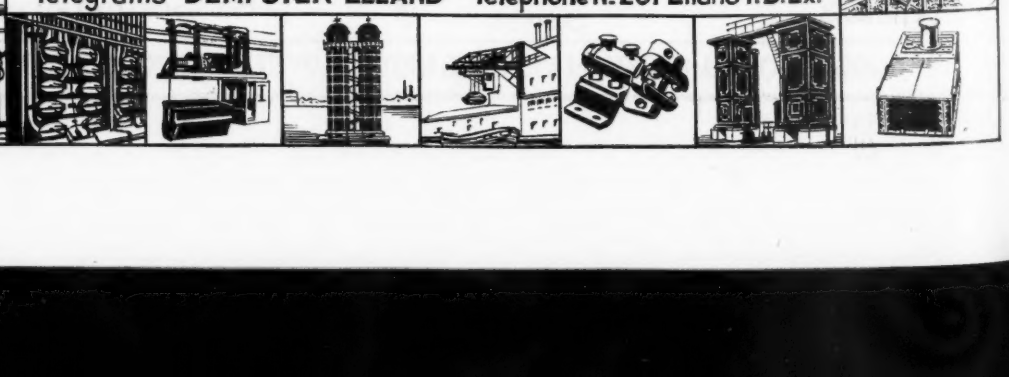


PERSONAL.

Mr. J. NEWELL REESON, Engineer-in-Chief and Technical Adviser to the Metropolitan Gas Company of Melbourne, is visiting England. Letters may be addressed to him, c/o Messrs. John Terry & Co., No. 7, Great Winchester Street, E.C. 2 (Agents to the Company), or c/o Union Bank of Australia, Ltd., No. 71, Cornhill, E.C. 3.

Mr. T. ANTHONY CANNING, Technical Assistant Engineer to the Newport (Mon.) Gas Company, and Past-President of the Wales and Monmouthshire Junior Gas Association, has been elected a Fellow of the Chemical Society. He is the eldest son of Mr. J. Herbert Canning, O.B.E., F.C.S., the Engineer and Manager to the Company.

Last month the Bombay Gas Company appointed Mr. CHARLES DONOVAN TERRY as their Assistant Manager and Engineer. Mr. Terry went to Mr. R. S. Ramsden as a pupil in 1920, and since completing his indentures had been on the technical staff at the Leamington Gas-Works. Before leaving for Bombay, he was presented by the staff and workpeople at Leamington with an inscribed wrist watch. Mr. Terry is the son of Mr. C. E. Ryder Terry, who has been connected with the gas industry for very many years.

Mr. JOSEPH WATSON, of Purston, has resigned from his position as Secretary to the Ackworth, Featherstone, Purston, and Sharlston Gas Company, after having held the position for about 49 years. He will be succeeded by Mr. THOMAS WALLER, who has retired from the Directorate of the Company to take up the duties.

Congratulations to Prof. J. W. COBB, C.B.E., B.Sc., F.I.C. He has been appointed Pro-Vice-Chancellor of the Leeds University. Although this election is a distinction which, we are sure, Prof. Cobb prizes very highly—particularly as coming in the first instance from his colleagues of the Senate—it is not a permanent office, and does not in any way supersede his appointment as Livesey Professor and Head of the Department of Coal Gas and Fuel Industries. The office was held, for instance, by Prof. Smithells at the time he resigned his Professorship of Chemistry, which he held along with the Pro-Vice-Chancellorship. One feature of the appointment, of which Prof. Cobb naturally must be proud, as indicating the position which Applied Chemistry has won for itself in the University of Leeds, is that for the first time the Senate have nominated as Pro-Vice-Chancellor a member of the Faculty of Technology.

The retirement on the 12th prox. of Mr. J. OLLIS, Chief Officer of the Public Control Department of the London County Council (of which mention was made at the recent annual meeting of the Association of Statutory Inspectors of Gas Meters), is referred to by the General Purposes Committee, who point out that he entered the service of the late Metropolitan Board of Works in 1882, so that he will have served the Council and their predecessors for a period of over 43 years, including nearly 19 years as head of the Public Control Department. The Committee desire to place on record their appreciation of the long and valuable services which Mr. Ollis has rendered to the Council and to London. His work has, they point out, embraced a wide variety of subjects, necessitating the display of considerable organizing ability and tact.

ELECTRICITY SUPPLY MEMORANDA.

THE protest of the gas industry against the suggested subsidizing of the electricity industry by the Government has raised greater interest in the subject than has done any other publicity; and it has even stirred some of the men in the electricity industry, who had only indolently looked at the subject from a distance, to make a close examination of it. We are charmed to remark that the electrical journals have thought fit to take notice of what is being said on the subject by the gas industry; but as is their strange custom, instead of treating the matter seriously, certain of them refer to what is said with a thin jocularity, and without any real attempt at controverting the points. This is all to the good. It evidences well the soundness and sense that reside in the arguments advanced by Mr. D. Milne Watson and others. There is another observation which shows how curiously erratic the electrical writers can be. Some of the very men who deride when the gas industry speaks on the subject have previously written against Government interference, have spoken of the risks of too much concentration of electricity generation, have mentioned that the increased transmission costs will negative slender savings in coal for generation, and have questioned whether any Government can, through electrical legislation, create a new heaven upon this much troubled earth by restoring industry, by way of electric power, to a state of prosperity—albeit the high costs of materials, labour, machinery, rates and taxes, and a few other odds and ends which go to make up industrial costs combine to inflict a load which has defeated all the best efforts of our brainy industrialists to gain ascendancy over their difficulties. Yet, when gas men who administer large interests, and have incomparably more business experience than their critics, speak against the principle of Government subsidies for industry, and point the mistakes of the politicians as to what electrical power can do or cannot do in re-establishing industry, the electrical writers are content to ridicule instead of to deal with the matter with a sense of responsibility. As we say, this is excellent, because anyone with an ordinary amount of intelligence will know why they do it. Anyway it would be an advantage if they would not, in their desire to ridicule the gas men who speak on the subject, change their own attitude in relation to it. A see-saw policy does not manifest a good balance.

A Good Sign.

Commonsense Considerations.

Since the addresses and speeches of Mr. Milne Watson criticizing the electrical intentions of the Government, there have been several letters in the daily Press. We have referred in previous "Memoranda" to some of the more interesting of these. There has been interest in reading another published in "The Times," by Mr. R. W. Dron, of Glasgow, in which he alludes to the expectations that have been raised by one political party after another regarding schemes of electrical development and coal carbonization. Those "expectations," we remember, have ranged from a saving of sufficient coal and money to pay off the National Debt in a few years to the placing at the disposal of every rural cottage electrical energy at a price never before dreamed of for lighting, heating, cooking, knife and boot cleaning, and for making land crops grow in a manner which they have never shown any disposition to do before, and to place the cow under the operation of yielding her product in a style which will give happiness and delight to both her and her owner. These predicted miracles have made many electrical men blush, and they have remonstrated with the authors because they know full well that their dream cannot materialize; for any attempt to cause it to do so would simply add costs which would make the supply generally dearer than cheaper. Through these vague and idiotic promises, Mr. Dron finds that the public, although somewhat confused by them, are inclined to acquiesce in the expenditure of vast sums of money in the hope that the results will follow in due course. If this expenditure takes place, there will in good time be enlightenment as to what will really happen. On this point (as on others) Mr. Dron makes a sensible remark. He says it should be clearly realized that the burden of the expenditure in super-power stations, main transmission lines, and the standardization of frequency will fall on our industries to-day, whereas the benefits, if there should be any, will only be reaped in a somewhat remote future. We talk of Government subsidies; but nothing much has been said of the sources of such subsidies. The greatest taxpayers are industry and commerce; so that what the Government are proposing to do—we emphasize the word "proposing"—is to make the cost of electrical energy a shade lighter, and to extract largely from industry and trade the money to do it. We see no advantage in that; and should the attempt fail, it will be another illustration of the stupidity of political interference in a matter which is best left to development in the natural course of things, and by those competent and interested in bringing about the best conditions. Again and again, says Mr. Dron, it has been demonstrated that the proposed super-power stations cannot effect the reduction in overhead costs which optimistic politicians predict, and that the provision of main transmission lines in advance of the probable demand for electric supply is an uneconomic proposition. While the standardization of frequency is for many reasons desirable, at the present stage of development the technical and financial difficulties are enormous, and the resulting benefits are very problematical (though Mr. Dron does think this is a different matter) that it would be a good thing if a standard frequency —say, 50 cycles per second—were adopted for future developments. We agree fully with him that "before the country sanctions capital expenditure, on the schemes of politicians, it must be demonstrated that the call for these is urgent, that the results are reasonably assured, and that there are insuperable difficulties in the way of private enterprise. Certainly these conditions have not been complied with in the political proposals for electricity or coal carbonization."

Developing Without Joint Machinery.

The electricity reorganization schemes of the Electricity Commissioners appear to advance to a certain point, and then come to a dead-stop. Precisely as we thought would be the case—what the Electricity Commissioners would like to see come about by quick process is being largely accomplished by allowing things to take their own

developing course. Take, for example, the Aire and Calder Electricity District. The local authorities in the West Riding have received from the Directors of the Yorkshire Electric Power Company a communication in which they state that they have reluctantly decided that further attempts to carry out the Commissioners' scheme for the reorganization of supply in the Aire and Calder District will be of no avail. Therefore, the Company are proceeding with the development of supply as entrusted to them in their last Act. In respect of uniformity and efficiency of supply, the position in the West Riding has already reached the development sought by the Commissioners. Working in close co-operation, the Power Company and the large municipalities are at present producing about 90 p.ct. of the electricity sold in the area, and elimination of small and uneconomical stations is proceeding in a natural manner without recourse to any joint scheme such as was formulated in 1921. The complete supersession of the few remaining small generating stations is assured by the provision which is being made for extensions. Then why trouble about a Joint Authority and compulsory powers?

Cheaper than Gas.

Our electrical friends suffer from a peculiar twist in their imaginations, and hyperbole with them is sound reasoning. On May 27, we referred to the heating of bath water at Poplar by means of electricity; in the "JOURNAL" for June 3, there was published a letter from Mr. Horace Bowden; and a comment on it appeared in the "Memoranda" on June 10. Our electrical friends regard, as a proper basis for comparison in this matter, electricity supplied at a shade above the average cost of coal delivered at the electricity station, as against the ordinary flat rate cost of gas in the district. We are sorry to see that they persist in looking upon this as perfectly fair, while at the same time failing to recognize that they are paying a tremendous compliment to gas. "Meteor" in the "Electrical Times" says that, in his original allusion to the matter (to which reference was made in our comments for May 27), he showed that electricity actually worked out cheaper than gas for heating at the Poplar Public Baths; and the advantage was so considerable that the use of gas was discontinued. The contributor of "Cooking and Heating Notes" to the same paper remarks that the gas industry does not like it noised abroad that electricity has proved cheaper than gas for water heating at the public baths, and that the gas apparatus has been removed in consequence. Whether or not Mr. Bowden can justify the supply of electricity at a price a shade above the average cost of coal delivered at the generating station is not at the moment the point in dispute, though we deny absolutely that that gentleman has in any way justified the charge from the commercial point of view. What we are complaining of is that there has been no justification of a comparison of that charge with the figure at which gas is supplied for lighting in the district. Apart from this, in our original criticisms, there were various matters referred to, to which neither Mr. Bowden, Mr. Hope, nor our friends of the "Electrical Times" have replied—one of them being the amount of coal that, on Mr. Bowden's own data, must be used at the electricity generating station in excess of coal-fired boilers to obtain the same quantity of heat for raising the temperature of the water to the point mentioned by Mr. Hope in his paper. In the "Electrical Review" we notice a letter from Mr. J. E. Gilbert, in which he says that, to the superficial reader of Mr. Hope's paper, his conclusion may be misleading, inasmuch as he has compared a moderate electric storage system with a very out-of-date coal-heated type. Mr. Gilbert contends that, had the Baths Superintendent at Poplar experimented with his 4000-gallon tank with heat derived from small coal or anthracite furnaces, the results would have been more satisfactory. However, all that our friends seem to be able to do is to thump on the note that electricity at the Poplar Baths, supplied at a cost a small fraction above the average cost of coal delivered at the generating station, is cheaper for heating water than gas supplied at the local lighting rates! We think, as they cannot do better than this, we may leave the matter, with a further remonstrance to "Meteor" as to a statement which appeared in his notes for June 4, that the "JOURNAL" wrote that "selling electricity at the cheap rate in question is said to be an impudent stunt." As a matter of fact, the words "impudent stunt" were taken from "Meteor's" own notes preceding our first reference to the matter. He then remarked "Our friends the gasmen always assume the electric heating of water to be an impudent stunt." We are sorry that in "Meteor's" excitement over the matter, his own expressions and phrases are attributed by him to us. Perhaps in calmer moments he will recognize that this is not cricket, and will remember that there have been other occasions on which it has been necessary to make the same protest, in view of his propensity for extravagance.

Mr. Walter S. Allen, J.P., who was Chairman of the Atherstone Gas Light and Coke Company, Ltd., left estate of the gross value of £24,027, with net personalty £22,375

OPENING OF NEW SHOWROOMS AT LOUGHBOROUGH.

On Thursday, June 11, new showrooms and offices of the Loughborough Corporation Gas Department were formally opened by the Mayoress, Mrs. G. H. Bower.

Situated in The Rushes, the new building has on the lower floor a polished teak shop front with two large plate-glass windows on either side of the entrance doorway, with leaded lights above. The upper floor is in brickwork, with Tucker's "Multiruf" facings. In the centre is a large oriel window with gabled roof, which is covered with Westmorland slates. On entering the building, one is at once in a convenient showroom, 34 ft. long by 19 ft. wide, with a polished hardwood floor, and fitted with special arrangements for displaying in operation the latest gas fires, geysers, cooking ranges, and lighting burners. Among the latter are indirect bowl fittings with distant control. At the back of the showroom is an oak counter and screen dividing-off the cashier's office; and at the rear of this is the Manager's office, the general clerks' office, and book room. On the first floor, reached by a staircase at the side of the cashier's office, are the Committee room and a store room. The building was designed by Messrs. G. H. & A. M. Barrowcliff, Architects, of Loughborough, and erected, under their supervision, by Mr. A. Faulks. On the new building coming into occupation, the Manager's office in Green Close Lane will be used as a gas testing laboratory.

OPENING CEREMONY.

The Mayoress was presented with a silver-gilt key, suitably inscribed, by Mr. A. M. Barrowcliff, the Architect, with which she unlocked the building.

The MAYORESS, in declaring the offices open, said she had noticed with satisfaction the improvements in cooking stoves, which, she hoped, would benefit the users.

Mr. G. W. LLOYD JAMES (the Chairman of the Gas Committee) moved an informal vote of thanks to the Mayoress.

The visitors and guests then made a tour of inspection of the showroom. Afterwards about a hundred of the company adjourned to the College canteen for tea, at the invitation of the Chairman and members of the Gas Committee.

Col. PIERCEY, in proposing the toast of the "Loughborough Corporation Gas Department," congratulated Mr. James and his Committee on the handsome offices they had built, and complimented the Manager of the gas-works, Mr. E. Onions, upon the ability he had displayed.

The CHAIRMAN, in reply, referred to the early history of the gas-works. They were originally established by Mr. G. Livesey, and were purchased from him in 1836 by a Company for the sum of £1686, the plant at that date being necessarily small. In 1868 the Local Board decided to seek Parliamentary powers to purchase the undertaking, but at a meeting of ratepayers an adverse vote was recorded, and the proposal was dropped. Thirty-one years later, in 1899, the authorized capital of £48,750 having been expended, the Company were seeking powers to increase their capital, when the Corporation also decided to promote a Bill for the purpose of acquiring the undertaking. The Corporation were successful, and the Company withdrew their Bill. The purchase price was determined the following year by arbitration, and the Corporation entered into possession on July 1, 1900. The cost of the undertaking to the Corporation was £102,154—more than double the capital value of the Company. The amount of gas made in 1900 was 70 million c.ft. To-day it was 160 millions. The number of consumers in 1900 was 2500, while at present there were 6156. Gas for cooking was not so popular in 1900, the number of stoves at that time being 400. To-day there were 4794 stoves in use.

PRESENTATIONS.

A presentation by the employees of the Gas Committee was made to Mr. Onions. This took the form of a smoker's cabinet, which was handed to the Manager by Mr. Sutton, who has been in the gas-works 53 years. A presentation of an inscribed piece of silver plate was made to Mr. Onions by the Gas Committee.

Institution of Civil Engineers.

At the Conversazione of the Institution of Civil Engineers, which was held on Wednesday last, there were one or two exhibits of interest to readers of the "JOURNAL." Dr. J. S. Owens exhibited his method of counting dust particles with the settlement dust counter, and showed microphotographs of the dust particles in the air taken outside Vigo Harbour, at the mouth of the St. Lawrence River, and in Surrey. Slides demonstrated the flue dust from a hand-fired boiler furnace and from a pulverized coal fired furnace. A cement-spraying apparatus was shown by Prof. S. M. Dixon. This machine throws cement mortar by a jet of compressed air. The mixture is blown through a rubber tube 2½ in. in diameter, without nozzle. The mixture ordinarily used is 6 to 1, fairly dry; and the coating becomes hard immediately. The air required is 220 c.ft. per minute at a pressure of 3·5 atmospheres; and the amount of cement thrown is 1 cub. yd. per hour. Carbon dioxide measuring instruments, due to Dr. Ezer Griffiths, were exhibited by the National Physical Laboratory.

CENTENARY OF BENZENE.

Honour to Faraday.

THE centenary of the discovery of benzene by Michael Faraday was celebrated on Tuesday, June 16, by the Royal Society, the Chemical Society, the Society of Chemical Industry, and the Association of British Chemical Manufacturers. The lecture theatre of the Royal Institution, in which the gathering took place, was filled by many distinguished scientists of this country and from many parts of the world.

The Duke of Northumberland (the President of the Institution) received delegates from many institutions, and said they were met to honour the discoverer of benzene and to call the attention of the rising generation to the motives which inspired Faraday's life, which made him a great scientific genius and a great man. The discovery of benzene had had the greatest material effect on the world, as being the foundation of the major section of organic chemistry. It was directly or indirectly the raw material from which manufactured dyestuffs were made. We who led in the discovery of chemical dyes had seen the key industry which resulted from it pass into foreign hands, and others receive the birthright which belonged to us. He was glad, however, to say that the situation was altering, and that we were regaining the position which rightfully belonged to us. The most distressing feature of our time was our failure to link up scientific methods and discoveries with the public service; but perhaps the present serious state of many of our great industries and the necessity for seeking new methods and new sources of power would teach a lesson which adversity alone could teach.

Prof. H. E. Armstrong rightly remarked that Faraday was one of the greatest experimental philosophers the world had known. He began his career as a chemist; and the range of his chemical activity was astounding. As one of the earliest workers in organic chemistry he stood pre-eminent. He not only discovered benzene, but three of the five chlorides of carbon, and he was the first to study the sulphonic acids, a class of compound now of great technical importance. The discovery upon which they based that commemoration, that of benzene, would always rank as one of the most fundamental discoveries of chemistry. If not the hub of the organic section of the chemical industry, benzene was at least a major part of it. Benzene only acquired technical importance from 1856 onwards. An enormous amount of credit was due to Perkin, who not only discovered the first aniline colour, mauve, but founded the original dyestuff industry. Nothing that had happened since Faraday made his discovery would have given the philosopher greater pleasure than the advance of our knowledge of the origin of colour—a subject which once filled his mind. By some uncanny process, Faraday had prophesied what the X-rays were now justifying.

Addresses praising the work of Faraday were delivered by foreign and British scientists; and several men of scientific eminence were elected hon. members of the Royal Society.

The Earl of Balfour said they would have been neglectful of their duty if they had not asked the world to join in celebrating the memory of one of the greatest men in science, perhaps the greatest experimenter the world had produced. They were celebrating the centenary of what was the first of the great discoveries associated with the name of Michael Faraday. It was the first of a long series of discoveries which succeeded each other with almost bewildering rapidity. In the 'thirties, and in the years following in which some of these discoveries were made, there existed profound political discussion in which parties were bitterly divided in storms of political controversy. He had often thought how strange it would seem if people could be brought to realize that the quiet worker within the walls of that institution was having a greater effect on the development of civilization, the welfare of mankind, and the progress of commerce and knowledge than anything which was doubtless important in the disputes of politicians in the evolution of society. They might look where they would at the modern state of knowledge and industry, and they would see that almost all, if not absolutely all, the most striking developments which had happened either in the world of industrial production or scientific speculation were associated with the name of Faraday, and intimately connected with his discoveries. In the course of the last 25 years there had been the most amazing developments in the general conception of the physical universe in which our lot was cast. They were all intimately connected with the discoveries of Faraday. In regard to modern theories of electricity, of the constitution of the atom, and of the arrangement of the atom within the molecule, Faraday's discoveries had had the greatest effect, and constituted the most profound speculation ever made into the constitution of matter, which was now the glory and the astonishment of the age in which we lived. Broadly speaking, the fact remained that in the world of practice and the world of theory Faraday was one of the greatest builders the world had ever seen.

CELEBRATION BANQUET.

The Duke of Northumberland presided at a celebration banquet at the Hall of the Goldsmiths' Company. Scientists from all parts of the world were present, among them being Sir Alfred Mond, M.P., Mr. Milne Watson, Prof. Bone, Sir Dugald Clerk, and Mr. E. V. Evans.

The toast of "The Immortal Memory of Faraday, Chemist and Philosopher, Discoverer of Benzene," was submitted by the President, and acknowledged in silence.

Sir Alfred Mond, M.P., proposing the toast of "Chemical Science and Industrial Art," spoke of the far-reaching effects of scientific discovery on daily existence. Faraday, whom they were celebrating, was one of those outstanding men to whom science was not divided into fields, but was in itself one great field. If scientific knowledge were more general than it was to-day, our attitude in regard to the application of science to medicine, agriculture, industry, and, in fact, to everything concerning life, would be based on something better than observation, assumption, or conviction. Each new discovery opened a way for more fundamental and still greater knowledge. The progress of humanity was marked in each successive stage by its conquest over nature and its utilization of nature's boundless wealth. The future prosperity of the world, the solution of its economic difficulties, the security of its teeming millions, depended far more upon its scientific progress, upon its increased power to produce wealth by the application of scientific thought and method to its industrial problems, than to any other force of human effort.

It has been decided to award a medal, without regard to nationality, for outstanding achievements in relation to Faraday's discovery of benzene. The first recipient of the Centennial Medal is Mr. James Morton, of Carlisle and Grangemouth, in recognition of his work in developing and extending the manufacture of anthracene dyestuffs.

An interesting exhibition was arranged at the Science Museum, South Kensington, commemorating the centenary of the discovery of benzene by Faraday. Exhibits showed the importance of benzene to the synthetic dye industry, and illustrated the distillation of coal tar, from which benzene is obtained on a commercial scale.

LAUNCHING OF THE "FIREGLOW."

A new steamer, the "Fireglow," was launched for the Gas Light and Coke Company on Friday last, June 19, from the yard of Messrs. S. P. Austin & Son, Ltd., of Sunderland.

In responding to the toast of "Success to the 'Fireglow,'" proposed by Mr. W. H. Dugdale, Managing Director of the building firm, Mr. D. Milne Watson, Governor of the Gas Light and Coke Company, said that during the war his firm were forced to build or buy 18 vessels, 12 of which were lost. They now had eleven vessels, the "Fireglow" making the twelfth; and they were looking forward to the launch of yet another from that yard at an early date. These boats helped to carry coal for their great works in London to the extent of 1,200,000 tons a year, so they would see the important part that shipping played in the activities of the Company. He was glad to know, having regard to the depressed conditions on the Wear, that of the five ships now building on the Wear two of them were for his firm. Trade was in a serious state in this part of the country, and it was difficult to see any way out. He could not help feeling that they were constantly looking in the wrong direction for a solution. Everyone seemed to be looking to the Government for help—for the Government to wave a magic wand, or find a panacea to help the country out of its difficulties, and re-start trade. He believed that lower taxation and strict economy by the Government would do a great deal, but that the country would be saved only by its own exertions—in other words, by self-help. Unfortunately, this was not the fashion to-day. They were told that, if the Government would only start an electricity scheme and link-up super-stations throughout the country, they would have the country back on its legs again; unemployment would disappear, and the country would boom with trade. The gas undertakings were prepared to meet electricity, given a fair field, without fear. They could not believe that a big Government electricity scheme would achieve the desired object. He pointed out that the north-east coast had probably the most efficient electricity service in the country. The costs were very low—as low as they were to-day in Chicago. Yet the north-east coast was plunged into the deepest depression. Therefore electricity did not appear to be the means by which a revival of trade was to be brought about. He emphasized that in gas manufacture only 15 p.ct. of the heat value of the coal was lost, whereas in electricity 80 p.ct. was lost. There was also a suggestion for saving the country by the adoption of low-temperature carbonization. Up to the present it had not proved to be a commercial success. The idea existed that, if the Government spent ten millions of public money, trade would be restored; whereas it was not believed that ten millions of private money would achieve the same object. Both masters and men must face the situation; and if they conferred together, ultimately a solution would be found.

Success to the new ship was proposed by Mr. W. H. Dug

dale; and Sir John S. Hindley, of Messrs. Stephenson, Clarke, & Co., proposed the health of the builders and the engine builders, the North-Eastern Marine Engineering Company, Ltd. Mr. Dugdale and Mr. Adams responded for the respective firms.

The "Fireglow" has a length of 225 ft. and a breadth of 36 ft., and is designed to carry 1850 tons deadweight.

LONDON AND SOUTHERN DISTRICT JUNIOR GAS ASSOCIATION.

Visit to Cambridge.

On Saturday, June 20, the Association visited that remarkable town Cambridge, which is such a delightful mixture of the old world and the new. About 180 members and their ladies took part in this visit, which, thanks to the excellent arrangements made by the Cambridge University and Town Gas Light Company, and in particular by Mr. J. W. Auchterlonie, the Engineer and Manager, proved of unusual interest and enjoyment.

During the morning the members inspected the Cambridge Gas-Works.

DESCRIPTION OF WORKS.

The works consist of three retort houses. There is a horizontal house comprising ten beds of 8's, machine stoked by Jenkins De Brouwer machinery. The second house consists of inclined retorts—ten beds of 6's set at an angle of 32°. The third house is a new horizontal house which has just been completed. The settings, which were constructed by Messrs. Gibbons Bros., consist of eight beds of 8 retorts placed in four tiers of 2's; the size of the retorts being 24 in. by 15 in. by 22 ft. long. Cort's anti-dip pipes have been installed, and two 12-in. Parkinson & Cowan retort-house governors have been fitted on the foul mains. There are ascension pipes and hydraulic mains on each side of the house. This house is to be operated by the latest type of Jenkins De Brouwer charging and discharging machines; and the coke plant consists of a "D. B." coke conveyor discharging into a screening plant and reinforced concrete hoppers which will hold large and broken coke and screened and fine breeze.

Outside the house a new condenser has been erected of the horizontal cross-tube type by Messrs. W. C. Holmes & Co. From this the gas is taken by a 24-in. main to the exhausters. The exhausting plant consists of three sets comprising a new 300,000 c.ft. per hour exhauster, one of 80,000 c.ft. per hour, and a 100,000 c.ft. per hour twin set, all by Messrs. Bryan Donkin & Co.

The washing plant comprises a Holmes "P. & A." tar extractor, a Kirkham, Hulett, & Chandler centrifugal washer, and a Holmes horizontal brush washer. This plant has a capacity of 2 million c.ft. per day. An additional washing plant to deal with 3 million c.ft. per day is to be put down during the next few months.

The purifiers are situated in two distinct units which can be worked separately, the first house being the most modern. It contains four boxes 40 ft. by 30 ft. by 6 ft. deep. These are mounted upon a steel-framed structure, with brickwork enclosing three sides of the building. The boxes were constructed by Messrs. C. & W. Walker, Ltd., and the lids are fitted with Clapham "Eclipse" joints. The second house contains three boxes 30 ft. by 20 ft. by 4 ft. 6 in. deep, and three water-lute purifiers which are used as catch boxes.

There are two station meters of 80,000 and 50,000 c.ft. per hour respectively, made by Messrs. Parkinson & Cowan, as are also the station governors. There are two Humphreys & Glasgow blue water gas plants, the combined capacity of which is 1½ million c.ft. per day.

The present holder capacity is somewhat limited, being only 1,700,000 c.ft. of town gas and 300,000 c.ft. of blue water gas. A new gasholder tank is in course of construction, and this will accommodate a holder of 3 million c.ft. capacity. The tank when finished will be 190 ft. in diameter by 38 ft. deep. It is being constructed by Messrs. R. Robinson & Co., and is of mass concrete 4 ft. thick at the base continuing for 17 ft. and tapering to 2 ft. 3 in. at the ground level. Steel bars 4½ in. by ⅝ in. are placed round the tank at 4 ft. 6 in. centres embedded in the wall; the first ring being 9 ft. from the base. The proposed holder is to be a three-lift column-guided one.

It was found that a retaining wall was necessary along the boundary of the works and the River Cam haulingway, to support the gasholder tank. This wall has just been completed, and consists of mass concrete panels to which piers were built afterwards. The height of the wall is 11 ft. above ground level, and the thickness of the piers is 1 ft 3 in. and the width 1 ft. 6 in. The total length of this wall is 412 ft. 6 in. A ¼-in. expansion joint has been left at the ends of each panel.

The boiler house contains three Lancashire boilers, 30 ft. by 8 ft. 6 in., by Messrs. John Thompson, Ltd., fitted with Goodrich & Hamlyn furnaces. The power house contains three steam electric generating sets of 50, 75, and 175 KW. capacity, by Messrs. Allen, of Bedford.

Over the power house a water softening plant is situated, and a deep well pump supplies water to a tank over the water softener, which forms the roof of the power house. This tank contains 25,000 gallons, and supplies all the water to the works.

An electric boosting plant of 300,000 c.ft. per hour was put down in 1923, and this is used for boosting gas from No. 2 holder on to the station governor, the excess being driven into No. 4 holder.

Practically the whole of the tar produced is dehydrated and used for tar spraying by the Local Authorities.

The liquor is only worked-up to 10-oz. strength at present, and is conveyed by barges to King's Lynn, where it is used for sulphate of ammonia manufacture.

Naphthalene troubles are not experienced at Cambridge, no doubt due to the use of a Parkinson vaporizer.

LUNCHEON.

After the inspection the members were conveyed to the Lion Hotel, where, with their ladies, they were the guests at luncheon of the Directors of the Gas Company. After the honouring of the Loyal Toast,

The Rev. E. C. PEARCE, D.D. (Master of Corpus Christi College, and Vice-Chairman of the Cambridge University and Town Gas Light Company), who presided, extended, on behalf of the Directors of the Company, a hearty welcome to the Association. Cambridge, he said, was an ancient town; but the Directorate of the Gas Company were anxious that this adjective should not apply to the gas-works. The members, during the morning, had been able to see what steps were being taken to render the works thoroughly modern.

Mr. W. NEWTON BOOTH (President of the Association) said that he had been asked to perform, on behalf of the Association, what was a pleasant but rather sad duty. This was to ask Mr. W. H. Noble, Assistant Hon. Secretary of the Association, to accept an illuminated address in recognition of the valuable work he had so willingly done for the benefit of the Association. Mr. Noble was leaving the country for the United States of America. They were all very grateful to him, and hoped that in his new sphere he would not forget the Old Country.

Mr. NOBLE, in thanking the Association for the address, which, he said, he would always value very highly, gave them his assurance that he would never forget the happy period he had spent with the Association.

Mr. NEWTON BOOTH then thanked the Directors of the Cambridge Gas Company, and Mr. Auchterlonie, for the splendid interest and entertainment which they had provided. As the Chairman had remarked, Cambridge was an ancient town; but the gas-works were anything but ancient, and reflected great credit on the Directorate and engineering staff. The members of the Association would long remember the enjoyable and useful visit.

Mr. W. L. WESTBROOK proposed, and Mr. A. BROADBENT seconded, a vote of thanks to the Directors of the Cambridge Gas Company, and to Mr. Auchterlonie.

This was carried with acclamation.

The Rev. PEARCE, in reply, voiced the regret of the Chairman of the Company (Mr. Parker) at being unable to meet the Association. As for the arrangements which had been made for their visit, the credit was due to Mr. Auchterlonie.

Mr. AUCHTERLONIE said that he had a warm corner in his heart for the London and Southern District Juniors, and was very pleased to offer them a welcome.

During the afternoon the party visited some of the Colleges. The weather was perfect, and the "backs"—always charming—were more delightful than usual.

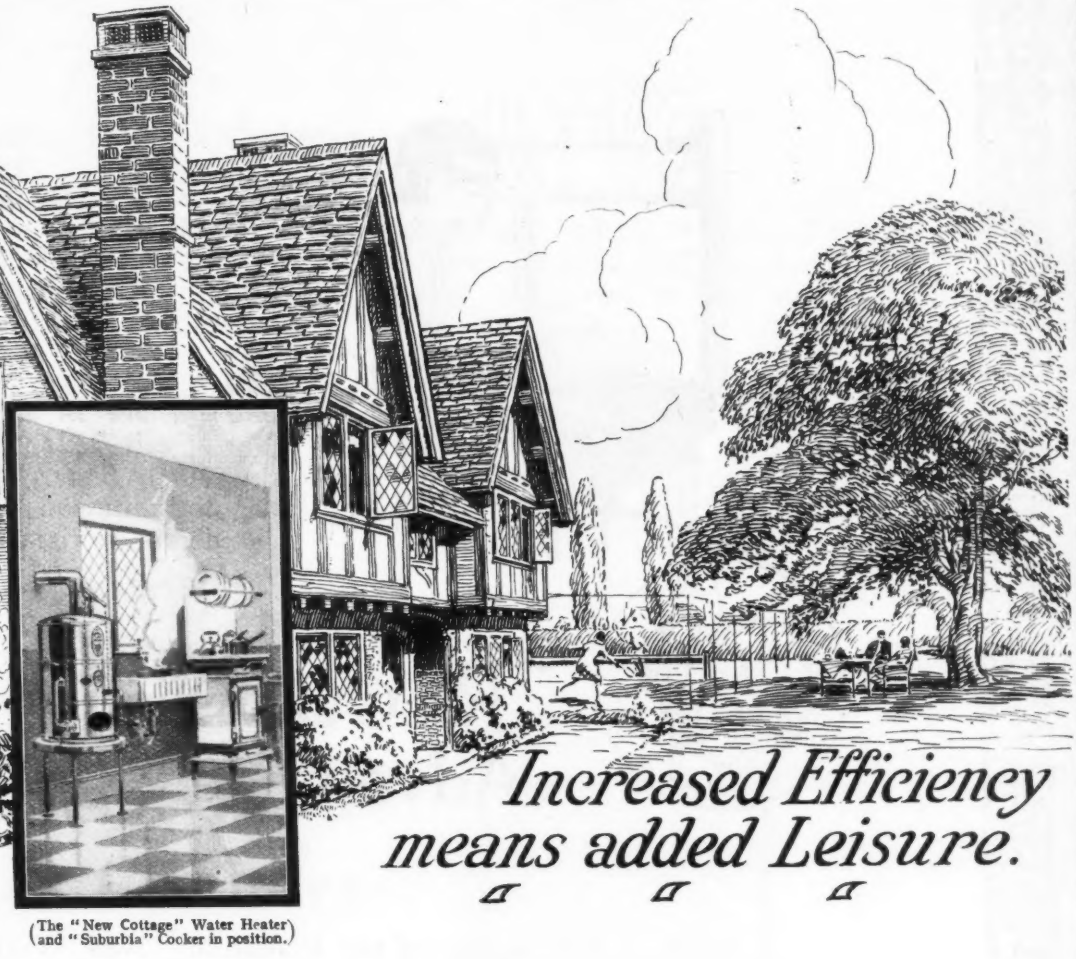
A very successful visit was brought to a close by tea, at the invitation of the Chairman and Directors of the Gas Company, at the Lion Hotel.

Coke-Oven Gas for Town Supply.

The Gas Companies of Albany, Schenectady, Troy, Cohoes, Rensselaer, and Watervliet have contracted to take between them the entire supply of gas from the coke ovens of the Hudson Valley Coke and Products Corporation at Troy (N.Y.), which are expected to be in operation some time next autumn. Approximately $6,000,000 will be the cost of the plant, which is to occupy an area of about 50 acres. Ultimately there will be three batteries of 55 ovens each, though at the moment only one unit of ovens is under construction. Thus the production at first will be 1000 tons of coke a day, and 5 million c.ft. of gas. When more gas is needed to serve the cities dependent upon the plant, there are blue water-gas generators which may be put into commission to furnish fuel for the ovens; while if the total production of the ovens is not enough, carburetted water gas sets are provided to supplement the capacity. The plant is planned to be elastic enough to meet any peak loads that may arise in the territory.

Visit to Derby.—Mr. Ferguson Bell writes to say that, before leaving for London on the Monday in Institution week, he placed his Assistant Engineer, Mr. J. P. M'Crae, in charge of the arrangements for the visit to Derby. Mr. M'Crae, with numerous other members of the staff of the Derby Gas Light and Coke Company, worked with enthusiasm, and to them much credit is due for the success of the visit.

The Parkinson Stove Co. Ltd



(The "New Cottage" Water Heater and "Suburbia" Cooker in position.)

Increased Efficiency means added Leisure.

NO man would begrudge the extra leisure hours afforded the housewife whose kitchen is equipped with PARKINSON labour-saving Gas-Appliances; also no one responsible for the smooth running of the domestic cooking and heating arrangements could fail to appreciate their outstanding efficiency under working conditions.

CREATE GOODWILL BETWEEN THE UNDERTAKING & THE CONSUMER BY FITTING PARKINSON GAS APPLIANCES.

Write for Complete Lists to :

THE PARKINSON STOVE CO., LIMITED.

BIRMINGHAM : ***Stechford.***

LONDON : ***129, High Holborn, W.C. 1.***

GLASGOW : ***13/27, S. Shamrock St.***

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"REGULO" Advantages:

Much of the success of the Radiation "New World" Cooker is due to the fact that all experimenting with the "Regulo" oven-heat controller was done by Radiation Ltd. before its introduction, and not afterwards by the Public.

Oven-heat can be regulated to suit all manner of cooking, and any recipe, however ambitious, that gives the "Regulo" times and settings, can be reproduced correctly, time after time, by the merest novice on the "New World" Cooker.

The broadcasting of this immense advantage is focussing attention on the merits of gas for cooking, to a degree never before possible, and must do a great deal to strengthen its position to meet competition from any other fuel.

Radiation advertisements are featuring the "New World" Cooker to upwards of fourteen million people, and the growing volume of sales is an index to the readiness of the modern housewife to recognise and accept genuine improvements in cooking apparatus.

Yorkshire judges a Cooker mainly by its oven.

If an oven is approved in Yorkshire, that oven is a *good* oven. . . . Many letters expressing a delighted satisfaction in the "New World" oven have been received from Yorkshire housewives, and particular mention is made of its superb bread-baking qualities.

The unique design of the "New World" oven, combined with its flue at the bottom, affords an even, well-distributed heat that makes the whole of the oven space equally good for cooking, and with the further assistance of the "Regulo," the whole operation of cooking becomes automatic and fool-proof from start to finish.

The Radiation

"NEW WORLD" Gas Cookers

Manufactured and Supplied by

ARDEN HILL & CO., Acme Works, Aston, Birmingham, and London.

THE DAVIS GAS STOVE CO., Ltd., 60, Oxford St., London, W. 1, and Luton.

FLETCHER, RUSSELL & CO., Ltd., Palatine Works, Warrington, and London.

THE RICHMOND GAS STOVE & METER CO., Ltd., 164-172, Queen Victoria St., London, E.C. 4, and Warrington.

WILSONS & MATHIESONS, Ltd., Carlton Works, Armley, Leeds, and London.

JOHN WRIGHT & CO., Essex Works, Aston, Birmingham, and London.

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PROPRIETORS.

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Service and Thoroughness

We design and manufacture Steel Hydraulic and Foul Mains, and Riveted Pipes, in a wide variety of design and to any width or depth to suit Engineers' requirements. Our modern facilities are backed by great experience.

In addition to Steel Mains we are large manufacturers of all the co-related cast iron pipe connections.

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Telephone: 543 Halifax (5 lines), DAY and NIGHT.
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All our Castings are cast in our special "Rafrakton" Metal, which ensures maximum toughness and durability.

150-7

THE LEEDS AND NORTHRUP POTENTIOMETER PYROMETER.

The following description of this useful piece of apparatus is based on particulars supplied by the Integra Company, Ltd., of Birmingham, who are the British representatives of the Leeds and Northrup Company.

It is becoming more and more recognized that the potentiometer pyrometer presents many practical advantages. For instance, the readings are entirely unaffected by the resistance of the thermocouples, lead wires, switches, or any contacts in the circuits. The readings, therefore, are unaffected by the length and cross-section of the thermocouples and lead wires. This is an exclusive feature of the potentiometer. There is complete and accurate compensation for the temperature of the cold junction. No accessory devices such as thermostats, buried cold junctions, &c., are required. Changes in the temperature of the instrument itself do not affect the readings. The potentiometer is inherently constant in its accuracy. Two elements, and two only, are required to be constant. One of these is the resistance of manganin, which has been proved to remain constant to 1/25 p.ct. The other is the voltage of the Weston standard cell. This also has remained constant to 1/25 p.ct. while in use for more than twenty years. Pyrometers seldom require an accurary better than ¼ p.ct. (5° in 2000°).

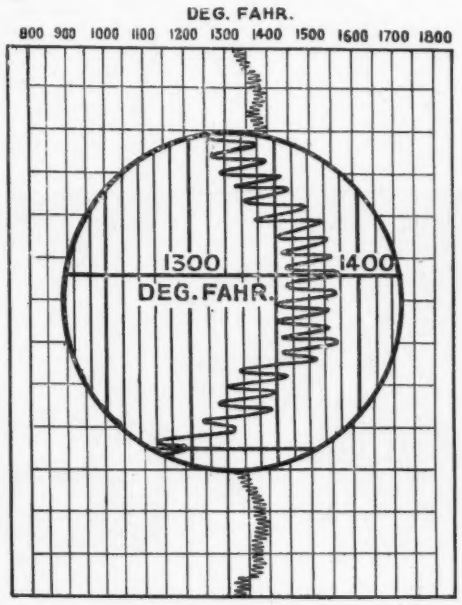
Owing to their principle, and in spite of their great accuracy, the potentiometer recorders are robust machines, for the only sensitive moving part in the instrument is the galvanometer, which is not calibrated, but serves merely as a current detector. A small electric motor with automatic governor absorbs the frictions, drives the recording mechanism (switching, printing, unrolling of the chart), and acts as a servomotor to set right alternatively the resistance and the slide wire so far as the galvanometer needle does not stand motionless. This motor has a surplus of power which is available to operate various signal devices without affecting in the least the sensitivity of the apparatus.

Application to the Gas Industry.

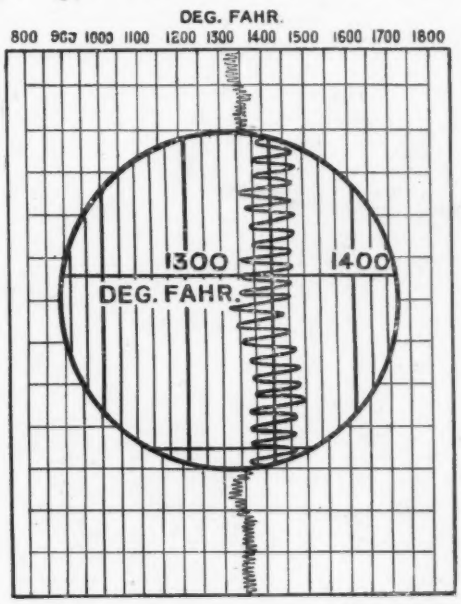
Gas engineers are agreed that present-day oils require close temperature control. Furthermore, as the specification and sale price are set by law or contract, profits depend almost entirely upon savings effected by skilful operation and the elimination of all waste. Take an average present-day oil of about 31° Bé. Best gasification is obtained, let us say, at about 1400° Fahr. in the superheater. Now, a low temperature will fill the seal pots with partly cracked oil and not a little undesirable tar. On the other hand, a high temperature brings excess naphthalene and lamp black to emulsify in the wash box. Either way ends in costly trouble and an inferior product. Consequently, to avoid all these difficulties, and keep within the profit zone, it is essential to use accurate temperature measuring equipment. The "L & N" signalling recorder is, in this way, a great help to the gas-maker. In addition to the graphic record, this apparatus gives visual signals with electric lights—red, white, and blue—high, correct, and low, respectively. Moreover, a deviation indicator gives on a dial the number of degrees one is away from the correct temperature. The recorder may be placed at any distance from the superheater—for instance, on a table in the engineer's office. The deviation indicator and signal lamp attachments are, of course, before the eyes of the operator. These flashing signals are ideal for attracting his attention. As a result, when the temperature starts to change, it will be noticed immediately, and can be restored promptly. Without the signal lights, the change would continue until the gas-maker happened to look at the instrument, and considerable trouble might result from even a short delay.

The "L & N" continuous charts reproduced here were made from a set that had just been equipped with a signalling recorder. [It may be mentioned that the diagrams are recorded by the apparatus in red ink.] Though taken only two weeks apart, marked improvement is shown. These two charts are conservative in picturing the gains to be made by the use of accurate temperature guides. Many sets are operating with greater variation than the 120° Fahr. shown on the chart to the left; but with the help of a signal-light recorder, they can be held within a range of 50° Fahr. or better.

To terminate this article, we would mention that for a certain type of water gas machine, the Leeds and Northup Company manufacture a master temperature controller which automatically maintains the temperature constancy in the superheater.



This record was made immediately after the recorder was connected, but without reference to it as an operating guide. Although an attempt was made to hold the average temperature constant, it varies from 1300° to 1420° Fahr., a variation 120° Fahr.



This record was made after two weeks' use of the "L & N" signal-light recorder as an operating guide. The average temperature has been held between 1325° and 1375° Fahr., a variation of only 50° Fahr. The sections of the charts in the circles are full size.

Cast-Iron Research.—The Council of the British Cast-Iron Research Association have recently extended the research programme by arranging for an investigation on the influence of silicon, manganese, and phosphorus on the formation of graphite in cast iron, to be conducted by Mr. M. L. Becker, M.Sc., at the University of Manchester.

Paint on Gas-Works.—Mr. Jacob B. Jones, Superintendent and Treasurer of the Bridgeton (N.J.) Gas Light Company, has been discussing in the pages of the "Gas Age-Record" the value and importance of the attractive gas-works. One matter to which he refers is the painting of gasholders. The management, he points out, is interested in getting the best covering that it can, for the longest space of time, at the lowest cost. The neighbours, on the other hand, are not interested in this at all; they want to know what colour it is going to be. In a case he quotes, the quality of the paint was decided upon, but several test sheets were prepared in order to show the different colours. Then invitations were sent out to all the neighbouring owners; and it being a residential neighbourhood, the subsequent conference was largely attended. It was agreed that a decision by a majority of those present should be considered final; and strange as it may seem, the decision was unanimous. Pursuing his subject, Mr. Jones says: If you really want to make the gas plant an attractive place to visit, aluminium paint on condensers, scrubbers, pipelines, and general plant equipment may be well worth your consideration.

SOUTHAMPTON'S NEWEST ATTRACTION.

Ideal Working Conditions and Service to Consumers.

Southampton is a beautiful town, from both natural and architectural points of view; and one of its features is an excellent shopping area in the main thoroughfare, to which was last week added a still further attraction in the form of new offices and showrooms for the Southampton Gaslight and Coke Company. The continuous growth of the Company's business having rendered the old premises in Ogle Road insufficient for their purpose, and the desirability having been recognized of coming out into the busiest street (though, as a matter of fact, Ogle Road itself turns out of the main thoroughfare), Mr. J. R. H. Jacobs, F.C.I.S., F.S.A.A., the Company's energetic General Manager and Secretary, looked about him, and was fortunate enough in due time to find what he wanted. During the war an hotel in Above Bar—a stretch of the long straight business thoroughfare to which reference has already been made—was purchased by the Y.M.C.A. for use as a hostel, and therefore the licence was given up. When its use for this purpose came to an end, it was in the market; and it is a portion of this former hotel that the Gas Company have acquired. Excellently indeed have the Architect (Mr. Harry J. Weston)

New Showrooms at Southampton.

and his partner, Mr. Gordon L. Thorne, under whose supervision the work was carried out, adapted the site to its new use.

THE GROUND FLOOR.

The first impression that is conveyed to the mind of the visitor is one of "roominess." There can be no crowding here, either of staff or of apparatus; and it will be possible to accommodate simultaneously any reasonable number of consumers or prospective customers. Thus has one of the cardinal points to be aimed at been secured.

The windows—one on either side of the main entrance—are, of course, large; and it is intended to maintain interest on the part of the general public by changing the contents of one window every week, so as to give each display a fortnight's run. For the opening, two excellent settings had been arranged, based on British Commercial Gas Association suggestions for window displays, with Mr. Jacobs's additions. "After the game, a refreshing bath," was the wording to one tableau, which showed a tennis court, and one of the players proceeding to a tempting gas-equipped bath. In the other window was a street scene, picturing mainlaying operations, with the watchman by his coke fire, and wording drawing attention to the advantages of this form of solid smokeless fuel. Lengths of main lying in the foreground had painted on them the names of villages on the borders of the Company's district, so that the people of Southampton might know exactly the extent of the area of supply. The names of these villages were Botley, Hedge End, Lyndhurst, Chandlersford, Hythe, and Fawley, some of which already enjoy, while others will shortly, the benefits of the Company's service. Readers will have noted in last week's "JOURNAL" the report of an inquiry by Mr. H. C. Honey into an application by the Company to the Board of Trade for a Special Order having for its object, among other things, to extend the area of supply. Each window is beautifully lighted by a 1500 C.P. row of inverted incandescent gas lamps designed by Mr. J. W. Lofts, of Messrs. William Sugg & Co., to meet the special circumstances. They are on distance control. A channel running the length of the window above the lights takes the products of combustion into a flue leading into the chimney. This installation is proof of the efficacy of gas for the lighting of shop windows.

The front showroom, which is 46 ft. wide and 68 ft. long, has been fitted up in a highly attractive manner, and in accordance with the most modern ideas. Everything is good, and of a type completely suitable for the purpose which it is intended to fulfil. In the centre, pylons are being arranged for the effective display of gas fires, as are to be seen in the British Empire Gas Exhibit, while on one side are arranged a model working kitchen and a bathroom—the latest forms of apparatus for cooking and water heating being demonstrated. In connection with the bathroom, one point may be specially mentioned. The Company have recognized, as have others, that, in connection with certain housing schemes, where the bath is provided on the ground floor, there is an advantage, from the builder's point of view, in providing one heating medium for both wash-copper and bath. They therefore show a gas-heated copper, fitted with a syphon arrangement of their own design, by means of which practically the whole of the heated contents

Showing Model Bathroom.

of the copper can be transferred to the bath. To achieve this object no increase in the length of the legs of the wash-copper has been found necessary. Of the lighting of the showroom, by Evered's fittings, all having switches, no more need be said than that it is fully in harmony with the handsome surroundings. The oak panelling of the walls and the teak-block floor are in keeping with the predominant idea—which has been to represent gas appliances in a homely setting.

No one will enter the showroom without giving attention to a fine display of fruit and vegetables bottled and crystallized. This is the work of Miss Baverstock, the Company's Lady Demonstrator, and many readers will remember looking—with feelings of something more than admiration—at the glass case containing these tempting specimens, when it was on view last year in the British Empire Gas Exhibit. As a matter of fact, the Company, at the instance of the Government, started this work for the forces during the war; and finding there was a demand among the consumers, they have continued it since. Consumers having a stock of fruit or vegetables which they desire bottled may apply to the Company; and it is done for them in their own houses—for which service a small charge is made.

At the rear of the showroom is the general office, 36 ft. wide and 68 ft. long, with a counter for the public in front, separated from the showroom by an oak and glazed screen. There is accommodation here for a large staff to work in the greatest comfort. The top lighting of this general office is very striking; and first-rate artificial illumination is provided by Sugg semi-indirect lamps, on distance control. On one side are several private offices, and a comfortable waiting room for the use of the public.

At the back are other offices, stores, and lavatories, and a staff entrance in Vincent's Walk, with accommodation for bicycles in the yard adjoining.

GROUND FLOOR, SHOWING ENTRANCE TO OFFICES.

OTHER FLOORS.

The old hotel staircase, although it was tucked-away in a dark corner, when brought to light by the removal of the surrounding walls, was found (under many coatings of paint) to be rather a fine piece of work in solid mahogany; and this has been retained and made to fit-in with the alterations. An electric lift, in addition to the staircase, serves all floors.

On the first floor the old hotel rooms have been converted into offices, and a new oak-panelled Board-room, 20 ft. wide and 38 ft. long, provided in the rear, with access to the flat roof over the general office below. This has been arranged as a roof garden. The second floor has been fitted-up as offices, &c.; while the third floor provides spacious accommodation for the two caretakers. The old cellars of the hotel have been adapted for use as strong rooms and stores.

An important item is the conference hall, with direct access to Vincent's Walk. This is 24 ft. wide and 36 ft. long; and it is intended that it shall also be for the social use of the Company's staff. In order that it may be perfectly applicable to both these purposes, it is provided with a sliding platform, which can be removed from view when not required.

A HOUSE-WARMING.

From what has been said, it will have been seen that the Southampton Gas Company have taken a step which will inevitably lead to increased business—firstly, by making the working conditions ideal, so that the staff shall give of their best; and, secondly, by affording ample facilities to the public to acquire a perfect understanding of the multifarious uses and advantages of gas. The new venture received an excellent send-off last Thursday, with the formal opening. The Chairman of the Company (Mr. J. C. Moberly, M.A.) presented the Mayor of Southampton with the necessary key, and his Worship the Mayor (Alderman T. M'Donnell, J.P.) then unlocked the door and declared the showroom and offices open. The word "formal" has been mentioned, but in reality there was nothing whatever that was formal about the occasion. Members of the Corporation, Directors, and officers of the Company, with a few visitors, made up a "family party," the most appropriate description of which perhaps would be "friendly relations." Exactly what is meant by this will be gathered by readers who noticed in last week's "JOURNAL" that, in the report of the proceedings before the Board of Trade, regarding the Company's application for a Special Order, the significant statement was made that objections were raised by the Southampton Corporation, but certain amendments to the Order were agreed between the Company and the Corporation.

Following the opening, about fifty sat down to luncheon in the conference room; and in the speeches which followed, the existence of this spirit of friendliness was emphasized, and was recognized as being mutually advantageous. The Chairman presided, and was supported by the following members of the Board: Sir H. W. Russell Bencraft, J.P. (Deputy Chairman), Mr. A. W. Oke, Mr. R. C. S. Pearce, Mr. Joseph Cash, and Col. E. K. Perkins, C.B.E., M.P. The Auditors were there—Mr. F. J. Burnett, F.S.A.A., and Mr. A. H. Cobbold. As to the officials, in addition to Mr. Jacobs, there were present Mr. F. Durkin (Resident Engineer and Man-

ANOTHER VIEW OF THE GROUND FLOOR.

ager), Mr. F. Lewis (Accountant), Mr. E. Dunbar (Assistant Engineer), and Mr. F. Pitman (Cashier). The guests included the Mayor, the Deputy Mayor (Alderman W. Mouland), the Sheriff (Councillor J. E. Silverman), the Town Clerk (Sir Richard Linthorne, O.B.E.), Mr. F. C. Carter (President of the Southampton Chamber of Commerce), Mr. H. C. Head (Winchester), Mr. T. Carmichael (Portsmouth), Mr. F. J Falkner (Romsey), Mr. Charles Clare, and Mr. R. Stephenson Clarke. Both Mr. Clare and Mr. Stephenson Clarke were particularly welcomed, because the firms of Messrs. Fletcher, Russell, & Co., and Messrs. Stephenson Clarke & Co. have for very many years had particularly close business relations with the Southampton Gas Company. Mr. F. W. Goodenough was to have been present, and to have responded to a toast, but to the great regret of all an urgent business engagement kept him away. Councillor F. R. Brown (the Chairman of the Municipal Electricity Department) would have been there with the Electrical Engineer, but both were in Brighton at a conference. Mr. Brown, however, wrote: "We both appreciate the good feeling existing between your Company and our undertaking."

Sir RUSSELL BENCRAFT (after the honouring of the Loyal Toast) proposed "Our Guests," and remarked that the Company worked in great amity with the Corporation. He also paid well-deserved tribute to Mr. Jacobs and his efficient staff.

Mr. H. C. HEAD, responding, congratulated both the Company and the town on the very fine premises they had seen opened that day. A gas company should, he said, have adequate showrooms and offices. Indeed, such an undertaking would not be doing its duty to the town it served if it did not provide headquarters worthy of a commodity that was supplied, for one purpose or another, to probably 95 p.ct. of the inhabitants. In many places the public service rendered by the gas company to the community was not sufficiently recognized. He felt that in their new showrooms and offices the Southampton Gas Company were giving an excellent lead to other undertakings in the district. In these days no business could be successfully conducted without publicity; but it should always be remembered that a satisfied consumer was the best form of advertisement. They wished the Company all success and prosperity in their new home.

The MAYOR submitted the toast of "The Southampton Gas Company," and spoke of the cordial relations existing between the Company and the Corporation. The Company were at present seeking powers to extend their area. The Corporation might have contested the Special Order step by step and line by line, and so set up a big fight; but instead of this he himself with the Town Clerk met the representatives of the Company at the offices of the Parliamentary Agent, and in twenty minutes, in the most cordial manner, every little objection was removed. [Applause.] The Corporation were determined that, as far as lay in their power, all difficulties that might arise should be solved by friendly deliberation. The Company's undertaking was one of the largest and best organized industries in the town, and was deserving of all consideration.

Mr. MOBERLY, in response, remarked that during the 35 years he had had a seat on the Board he had been amazed at the progress of the industry, and at the ignorance of those who persisted in going about saying that "gas was on the wane." Nothing could be farther from the truth; for the industry had never been in a stronger position than it occupied to-day. The Company were at the moment increasing their works to meet the demands for gas, and were seeking an Order to extend the area, in order to satisfy the clamour by neighbouring parishes for a supply. He was confident that amicable relations would continue so long as they had with them their genial and tactful General Manager, Mr. Jacobs. The Directors felt that they owed those fine premises, too, to the energy, enterprise, and ability of Mr. Jacobs, in conjunction with his old friend Mr. Harry J. Weston, who had acted as Architect.

The staff were not forgotten, for later in the day about 130 were the guests of the Company at tea in the new premises.

On the following afternoon about 300 of the stockholders inspected the new premises, and were afterwards entertained at tea.

Benzole Sales in Germany.

In the current issue of the "Iron and Coal Trades Review" it is mentioned that, in order to guard against the dangers arising from irregular Franco-Belgian sales, the Bochum Syndicate of Germany have initiated steps with a view to bringing about an understanding with the French and Belgian benzole producers. The proposals are said to have been favourably received and promise to lead to satisfactory results. The first thing required is the creation of firm syndicates in France and Belgium. The German Syndicate will then be able to place their experience in propaganda work and sale policy at the disposal of these syndicates, and pave the way for the increase of deliveries in both those countries. At the same time efforts will be made to lead the benzole finding its way into Germany into a uniform channel—that is, through the organization of the Benzol Syndicate, in order to check in this way the present sale of foreign benzole in Germany at low prices. It is also proposed to work in the direction of bringing about a stabilization in prices by the conclusion of an agreement under which, in the event of a shortage of benzole arising in one or other of the interested countries, compensation deliveries would be supplied by the country having a surplus.

YORKSHIRE JUNIOR GAS ASSOCIATION.

Presentation to Late Secretary.

On the occasion of the June meeting of the Yorkshire Junior Gas Association, during a visit to the works of the Wakefield Gas Company, a presentation was made to Mr. F. A. C. Pykett, the late Hon. Secretary of the Association, now Distribution Superintendent at Lancaster. Mr. Pykett was Hon. Secretary for three years.

The presentation, which took the form of a handsome Jacobean oak bureau bookcase, subscribed for by the members of the Association, was made by Mr. E. Gillett, the President of the Association, who referred to Mr. Pykett's three years' excellent and enthusiastic service. Mr. Pykett had always given his best to the Association, both before and during his Secretaryship, and they all hoped he would find his new sphere of activity pleasant and profitable, and that he would long be spared to enjoy the gift.

Mr. Pykett, responding, said he had done what he could for the Association because he felt that it was the duty of every member to put in the best of which he was capable on behalf of all, whether it was in some definite office or in the more modest position of an ordinary member. He thanked the officers and Council, and the members generally, for their support during his Secretaryship, and for their generous gift.

THE "ABBIRKO" SUCTION SERVICE CLEANSER.

Gas engineers are agreed that it is preferable to withdraw the material forming the stoppage in a service pipe, rather than force it into the main. The advantages are obvious, and include the following:

The stoppage cannot recur by the same material again passing into the service pipe.

The stoppage cannot be aggravated by forcing more loose matter into the elbow or bend at the junction to the main.

The area of the main is not reduced by repeated clearing of the services.

The material causing the stoppage may be examined.

To obtain the above results, it is essential that a very powerful vacuum be obtained, and maintained throughout withdrawal; and to be effective this suction should be applied suddenly, in order to give the necessary shock action to loosen any solid accumulation. In addition the apparatus should be reasonably portable. The above ideals are admirably carried out with the "Abbirko" suction cleanser, manufactured by Messrs. Abbott, Birks, & Co., of No. 113, Newington Causeway, London, S.E. 1. The energy required is obtained by a storage of air pressure up to 300 lbs. per sq. in. in their Renrut No. 34 high-pressure cleanser, and released into the suction service cleanser by means of a patent instantaneous piston release valve. This operates a piston which in turn suddenly extends a collapsible reinforced vulcanized bag, causing a powerful suction. The material withdrawn is intercepted by an easily detachable filter. The whole is portable, strongly constructed of best materials, and most reliable in action. This cleanser, it may be mentioned, has cleared solid-blocked services 18 ft. long by 1½ in. diameter, containing wet rust, naphthalene, and other matter.

"Metallon"—A New Anti-Corrosive.

Corrosion and the various processes for its prevention have always interested gas engineers. We hear that a new process has now been placed upon the market whereby a protective metal film can be placed on iron, &c., cold, with a brush in a similar manner to ordinary paint. This material, known as "Metallon," forms a protective couple with the underlying iron. No pickling process is necessary, consequently the metal is not weakened and an alloy is not formed on the surface of the underlying material. The simplicity of application also allows repairs to be carried out *in situ* at a minimum of expense and disorganization. Another interesting property of "Metallon" is that it will not peel, blister, or lose colour up to the melting-point of the metal from which it is composed. Thus, aluminium "Metallon" will maintain its appearance and protection up to 659° C., or 1220° Fahr. The key obtained by the material is exceptionally good; and we understand that it will adhere to a glass surface with such firmness that it is impossible to remove by any ordinary means. The possibility of satisfactorily metal-coating asbestos flue pipes—say, with copper—for rendering their appearance more attractive has frequently been discussed by both the gas industry and the various makers concerned. It seems possible that "Metallon" would meet this demand cheaply and effectively. The havoc of corrosion is estimated to cost this country £100,000,000 per annum. We hope that this new material may be able to reduce this expenditure. In any case, in view of the inventor's claims, it would seem to be worthy of investigation by the gas industry.

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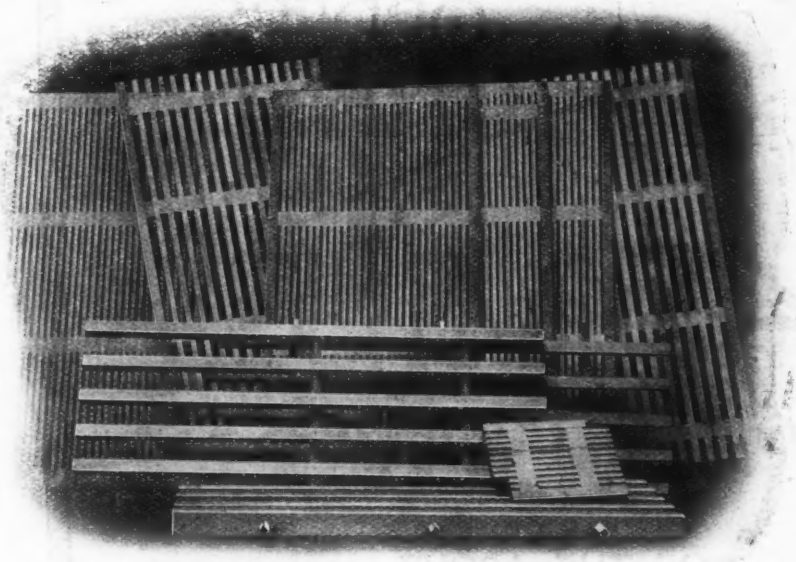

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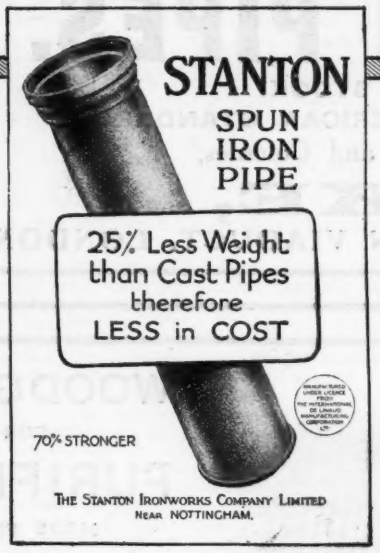

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NORTH OF ENGLAND GAS MANAGERS' ASSOCIATION.

Visit to the Works of the Consett Iron Company, Ltd.

The Association were fortunate enough to be the guests, on Wednesday last, June 17, of the Consett Iron Company, Ltd., of Consett, Co. Durham. Among the most enterprising of north-country firms, the Company control collieries, coke-ovens, brick works, blast-furnaces, and up-to-date steel works.

It was to inspect the silica brick works and the Wilputte coking plant that the visit was arranged—the former being claimed to be the most up-to-date in the country, if not in the world, and the latter being the only one of its kind in the Kingdom.

The Company are past masters at entertaining in this way. They have plenty of good things to show, they show them to the best advantage, and under cross-examination they display frankness and patience in explanation which satisfy even the most curious. Thus the visit was made most enjoyable, and from the points of view of both interest and instruction it was acclaimed a great success.

The party, which included the President, Mr. W. W. Atley, of Stockton, and the Hon. Secretary and Treasurer, Mr. Norman S. Cox, of Sunderland, numbered between 45 and 50. The majority made the journey to Consett by chars-a-bancs, through the charming scenery of the Derwent Valley, which always surprises those who imagine that the county of Durham is composed exclusively of pitheads, slag heaps, and unsightly mining villages. Fortunately, both for the journey of about an hour, and for the inspection, the weather was fine.

Arrived at the Templetown Brick Works—the first objective of the visit—the members were met by Mr. E. J. George, General Manager of the Company, and Mr. A. H. Middleton, Superintendent of the Coke and Brick Works, and other officials, who, without delay, divided the party into groups, and began personally conducted tours of the works.

The Templetown Brick Works.

A short description of the works was given in the "JOURNAL" on the occasion of the visit last autumn of the Coke-Oven Managers' Association ["JOURNAL," Oct. 22, 1924]. In view of the great interest and admiration displayed by the Gas Managers on the present occasion, some further details of the plant may well be recorded.

The works are devoted entirely to the manufacture of silica refractories, the raw material for which is obtained from a large royalty, containing an excellent quality of ganister, situated within a few miles of the works. The rock undergoes a preliminary sorting at the quarries, and is then brought to a storage yard at the works, where washing and further sorting are performed. Constant supervision and testing of the material in all stages of manufacture, from the raw to the finished product, ensure the maintenance of the requisite quality, and the selection of the ganister best suited to each particular purpose. Research and routine tests are carried out under ideal conditions in a splendidly equipped and up-to-date laboratory, which was one of the first objects of interest to be inspected.

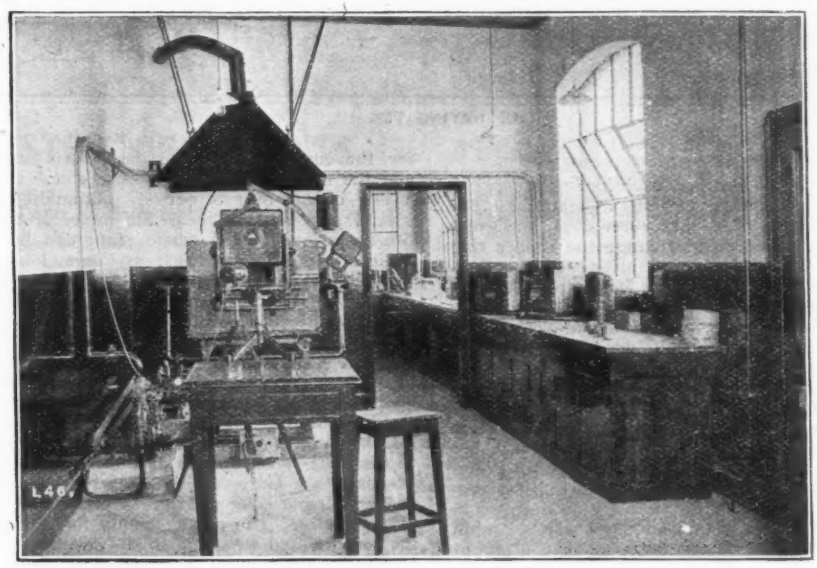
CRUSHING, WEIGHING, AND MIXING.

A swinging-jaw crusher, capable of dealing with 12-in. cubes, reduces the ganister to 3-in. size. The crushings are then elevated and further reduced to 1-in. size by a similar machine. The material is next automatically fed into a gravity-bucket conveyor, which distributes it to weighing pans. Automatic discharging of the buckets and weighing are accomplished by a very interesting device. The buckets are tipped by gear which goes out of action when a weighing pan has received the requisite weight of material, and re-engages when the pan has been emptied.

The fine crushing is accomplished, with the addition of a carefully measured quantity of milk of lime, in either of two mills of the revolving-bottom type; the period of grinding varying according to the use for which the finished material is required. The crushing weights, and also the weight of the charge ground, can likewise be varied to suit the ultimate product. A normal amount dealt with at one charge is about 18 cwt. An automatic tipping device delivers the silica mud to tipping bogies in which it is conveyed to hoppers, which supply the moulding tables.

THE MOULDING PROCESS.

All moulding is done by hand on steel pallets; the Company not having discovered any machine moulding process which can be relied upon to give the accuracy of size and shape which they guarantee. Steel moulds with removable sides are used, made with the greatest care in the Company's own works. A very large variety of shapes is kept in stock, but special orders receive prompt attention. The moulders' work is very fascinating to watch, and the dexterity of touch in removing the moulds after beating the mud into them is remarkable. The ordinary bricks are moulded six at a time, and other shapes one or more according to size.

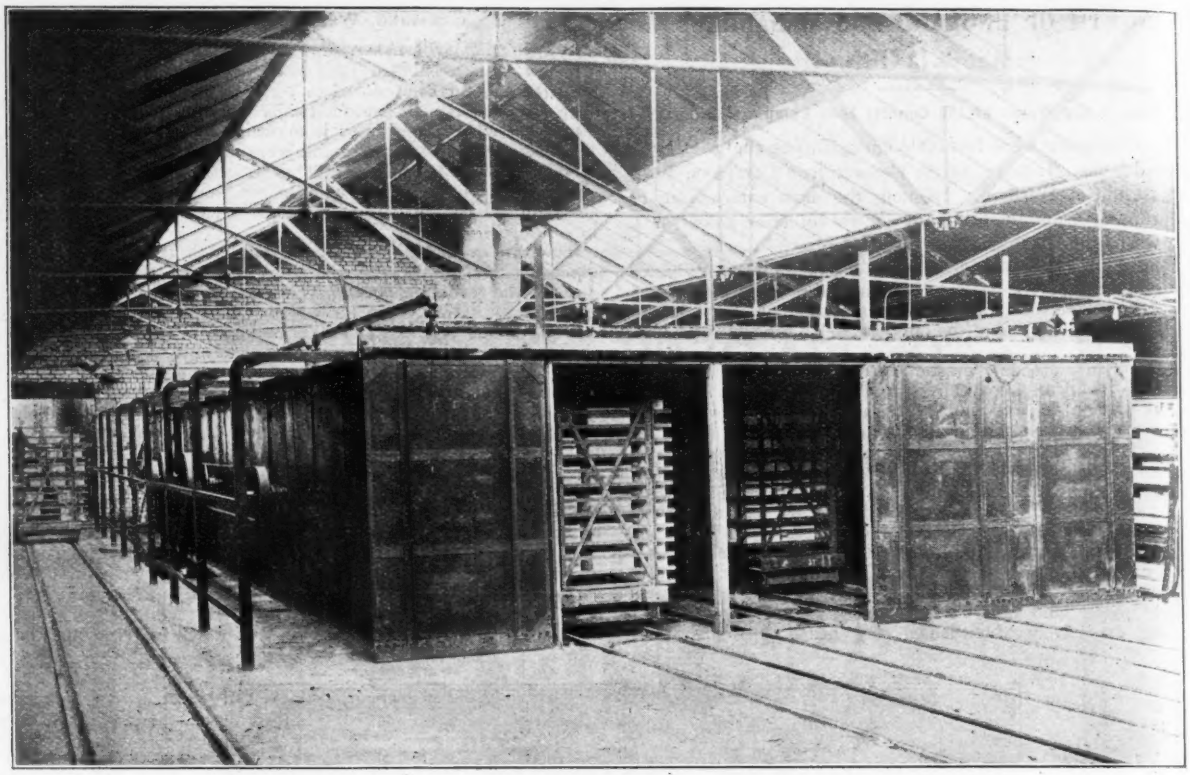


THE LABORATORY, TEMPLETOWN BRICK WORKS.

DRYING THE SHAPES.

The shapes on their pallets are then loaded on to rack cars, on which they pass through a Proctor drying tunnel. This consists of a chamber 50 ft. long by 20 ft. wide by 6 ft. 6 in. high. In it are three distinct temperature zones, not separated from one another in any way, but produced by the arrangement and disposition of the dry-air inlet, the moist-air outlet, and a series of fans and heating coils. The temperature of the first zone is approximately 130° Fahr., and here the shapes remain long enough to be thoroughly heated through. The second and third zones are at about 145° and 205° respectively, and, in the whole process, moisture content is reduced from about 14 p.ct. to 0·09 p.ct. In the case of ordinary bricks, this takes about eight hours. Naturally the larger shapes require a longer period, and this is provided for in that three sets of rails run through the tunnel, on each of which a different rate of progress can be maintained. Eight cars can stand on each rail, the total capacity of the dryer being 14,976 bricks. As each car of moist shapes is fed in, a car of dried ones is discharged at the other end.

By this system, the shapes are dried in a continuously circulating atmosphere, humid in the preliminary stages, and gradually increasing in temperature. Heat is applied evenly to all surfaces, and unwanted stresses are not set up by the exterior drying before the heat reaches the interior—a most important consideration.



THE DRYING TUNNEL.

BURNING.

Eight kilns are available for burning, each having a capacity of 100,000 standard bricks, or over 300 tons of material. The operation of stacking occupies more than three days, and great care must, of course, be taken so to arrange the shapes that there is sufficient space everywhere for expansion. The heating-up takes 12 to 14 days, a temperature of at least 1500° C. being attained. The kilns are then sealed, and cooling is by radiation only, the entire operation occupying four to five weeks.

The "set" material is then stored in dry sheds, where a rigorous inspection for size and soundness is made before dispatch. The running of railway sidings into the sheds considerably facilitates loading operations.

Mention of the careful control of every detail of the process has already been made. This is a feature to which the Company attach the greatest importance, and certainly all those present agreed that, judging from appearances, the finished products left nothing to be desired. The Company are large consumers of their own refractories in iron and steel works, and in their coking plant, so that the materials are under continuous test on the spot under actual working conditions. The lay-out of the works is admirably conceived, and the impression gained is one of ample space, smooth and expeditious working, and the maximum of consideration for the workers engaged.

The Company state that they have sold over 20,000 ft. of silica retorts, both vertical and horizontal, which are giving satisfaction in every case. The carbonizing time has been reduced by 20 to 25 p.ct., as compared with fireclay and semi-siliceous retort material, without any additional cost in heating the settings. In other words, this means that a works changing over to straight silica material as replacements become necessary would have its throughput increased by 20 to 25 p.ct. without further capital expenditure in putting-down more settings.

The Fell Coke Works.

A few minutes by road took the party to the Wilputte coke-oven plant, which is conveniently situated near the blast furnaces and the steel works, which are intended, when in full work, to be the chief consumers of the coke and surplus gas. A general description of the works was given in the "JOURNAL" for Oct. 22 last, p. 237, to which reference may be made. The gas engineers on this occasion evinced considerable interest in the sister industry of coke making.

One of the chief centres of interest was the carefully controlled and efficient arrangement for heating the settings, which, of course, is entirely by their own gas. Every flue has its own regenerator, and the ovens are heated from both sides, there being 15 vertical flues on the coke side, and 13 on the ram side. Gas burns on one side in the vertical flues, and the products of combustion pass along a horizontal flue at the top and down corresponding flues on the other side, and through the regenerator. After half-an-hour, the process is reversed, and air is then drawn through the heated regenerator for the combustion of the gas which now heats the works and the regenerator on the other side.

The change-over is entirely automatic, and is worked by special gear situated near the meter and chart room, where the operations of the whole plant can be watched and controlled. An ordinary clock makes and breaks electrical contacts at the required intervals for reversing the flue circuits. A small pilot motor drives a commutator shaft, which is furnished with contacts, and these start and stop the change-over motors in proper turn. First of all a 5-H.P. motor comes into action and shuts-off the gas on one side of the battery. About 15 second later another motor reverses the air and waste-heat valves and dampers, and after 15 seconds more a third motor opens the gas cocks on the other side.

Considerable interest was displayed in seeing the pushing of the coke—an operation expeditiously performed for the size of charges. These are of slightly over 11 tons of coal per oven, giving a coke yield of 85 p.ct. for a carbonizing period of 15½ hours. The arrangements for quenching, elevating to the screens, and screening of the coke were all much admired, and the whole process and lay-out of the plant were generally agreed to be full of interest.

THE CONSETT COMPANY'S HOSPITALITY.

After a thorough inspection of the coking plant, an adjournment was made to St. Aidan's Hall, where the Consett Iron Company entertained the members at tea, Mr. E. J. George being in the chair.

Time was short for speech making, as many of the members had far to go after returning to Newcastle.

Mr. E. J. GEORGE, in a few words, said how glad his Company had been to welcome the Association and show them whatever there was to see.

The PRESIDENT, in returning thanks for the great hospitality offered, said that the visit, in addition to being of interest, had been also an education to most of them. Most striking to members of the gas industry were the carbonizing speeds attained, and the economy of space effected by the Wilputte plant.

Mr. GEORGE briefly returned the thanks of the Company, and

Mr. A. H. MIDDLETON added how pleased he and his staff had been to receive the Association at their works. If any of them had not seen as much as they wanted, he would be only too pleased to receive them at any time in twos or threes, and go into more detail. He announced, amid general approval, that he had accepted an invitation from the President to read a paper at the October meeting of the Association, so that he would not at present say anything of technical matters.

With this the proceedings terminated.

Central Station Voltages and Charges.—Messrs. S. Rentell & Co., Ltd., of No. 36, Maiden Lane, W.C. 2, have published a little volume, at 1s. net, giving particulars of the principal central stations of the United Kingdom. The tables have been revised to the latest possible date consistent with the exigencies of printing.

CORRESPONDENCE.

[We are not responsible for opinions expressed by Correspondents.]

Mr. Carr's Institution Paper.—The Heat Balance.

SIR,—In reply to the discussion on my paper on the "Selection, Design, and Construction of New Carbonizing Plant at Stretford," at the annual meeting of the Institution of Gas Engineers, I stated that I would communicate the figures of the heat balance on six days' experimental run of the plant, which shows an efficiency of carbonization of 82·04 p.ct. These figures are as follows:

Total heat units in raw coal.
1,538,783 lbs. Dry coal at 13,761·7 B.Th.U. per lb.
Total heat in therms = 211,762 = 100 p.ct.

—	Therms.	P.Ct.
COKE—		
Potential heat in surplus coke (dry), 907,230 lbs. at 12,202 B.Th.U. per lb.	110,700	52·27
GAS—		
Therms per ton, 75·96 (corrected) potential heat in gas	53,962	25·48
TAR—		
Estimated yield, 76 lbs. per ton. Dry tar at 14,425 B.Th.U. per lb. Therms in tar . .	7,788	3·70
STEAM—		
Estimated heat recovered as steam from waste-heat boiler. Waste gases at 538° C. inlet temperature (estimated 60 p.ct. efficiency) .	1,249	0·59
Total efficiency of carbonization . .	..	82·04

The figures relating to the heat value in the tar and steam from the waste-heat boiler are estimated. Observations taken over three months show that the yield of tar is approximately 82 lbs. per ton. In the above estimate, however, the yield has been taken at 76 lbs. per ton, as this was the average yield obtained with similar slack coals over a period of 12 months, but with the old horizontal settings equipped with ascension pipes and hydraulic mains.

In estimating the heat recovery by a waste-heat boiler, the efficiency of the boiler has been taken at 60 p.ct., although a much higher efficiency is guaranteed by the makers. It was considered desirable, however, that this should be taken on the low side, as the boiler was not in operation.

The high heating efficiency of the settings is attributable to the double regenerator, in which the regenerators on either side of the waste-gas flues are used for preheating the secondary air when the setting is working on its own self-contained producer.

Another point raised during the discussion was the speed of the coke telpher machine. The operating speeds are as follows:

Hoisting, full load	75 ft. per minute
Travelling, full load	600 ft. ,, ,,

The no-load and lowering speeds are in excess of the above speeds.

Gas-Works, Stretford,
June 17, 1925.

W. M. CARR.

Sir Dugald Clerk's Institution Paper.

SIR,—Having read with great interest the paper given by Sir Dugald Clerk, K.B.E., D.Sc., F.R.S., M.Inst.C.E., at the Institution meeting, I am sure he will not mind my drawing his attention to the fact that gas for power purposes is not being sold in Sheffield for 6·4d. per therm, as he quotes; but the following prices are in operation, and have been so for about twelve months:

For gas supplied up to:	
500 therms	7d. per therm
Over 500 up to 2,500	5½d. ,, ,,
,, 2,500 ,, 15,000	5¼d. ,, ,,
,, 15,000 ,, 30,000	5d. ,, ,,
,, 30,000 therms	4d. ,, ,,

From the above figures it will be seen that gas is sold at 4d. per therm in Sheffield, and a large number of the power users obtain it at that price.

Sheffield Gas Company,
June 18, 1925.

R. HALKETT,
General Manager and Secretary.

REGISTER OF PATENTS.

Manufacture of Sulphate.—No. 231,788.

GILL, H. A., of Chancery Lane, W.C. 2. A communication from Sté. des Fours à Coke Semet Solvay et Piette.

No. 31,230; Dec. 30, 1924.

The object of this invention is to provide a process of manufacture of sulphate of ammonia giving a perfectly dry and neutral salt, and possessing any acid character due to the presence of acid brine.

The invention is essentially characterized by the fact that, after draining, the salt produced in the saturator is washed with successive solutions of sulphate of ammonia more and more pure; the filtrate after each washing being recovered and used as the less pure washing solution, and the excess of this latter containing the largest amount of acid liquor being conducted into the saturator. The washing solution, composed of neutral sulphate of ammonia, may be alkaline, and for this purpose contain ammonia, ammonium carbonate or ammonium bicarbonate.

Blending and Briquetting for Vertical Retort Operation.—No. 233,508.

WOODALL-DUCKHAM (1920), LTD., and DUCKHAM, A. M'D., both of Grosvenor Gardens, S.W. 1.

No. 10,313; April 25, 1924.

By this invention a continuously operated externally heated vertical retort for carbonizing coal in a single stage at high temperatures, commonly used in the gas-works, is worked by charging it with fuel which has been prepared by blending and briquetting so as to produce a material of uniform chemical and physical characteristics; the patentees claiming that such preparation of the material for a continuous vertical retort under gas-works conditions is in itself a new operation, and obviates difficulties which arise in connection with the working of such retorts.

The following advantages are enumerated: Softening and swelling practically eliminated; high-volatile non-caking coals permissible; ready evolution of volatiles; uniform discharge; minimization of carbon deposit owing to free passage of gases; heat penetration improved; less breeze formed; better steaming conditions; and cyclic use of the pitch made—for binding the briquettes.

Coin-Freed Mechanism.—No. 233,539.

SMITH, E. W., and SMITH METERS, LTD., both of Kennington Park Road, S.E. 11.

No. 13,515; June 2, 1924.

This invention is for a modification of patent No. 219,252, abstracted in the "JOURNAL" for Sept. 3, 1924, p. 754.

The present specification provides that the coin table or lever has an upstanding arm the end of which is fashioned as a tooth or dog adapted to engage a toothed or notched quantity wheel; and a spring is placed in such position—say, coiled round the pivot of the coin table—that it tends to keep the tooth out of engagement with the wheel. This arm is positioned between the pivot and the coin position. The table may be flat, and on it is mounted a slidable block or distance piece adapted to be held by a screw at any required part of a groove formed in the table. This screw may be used alone, in which case it will be slackened and tightened to allow for the movement of and for the fixing of the block, or it may be used with or substituted by a spring washer or equivalent device, which will afford sufficient grip on the block to hold it at any point.

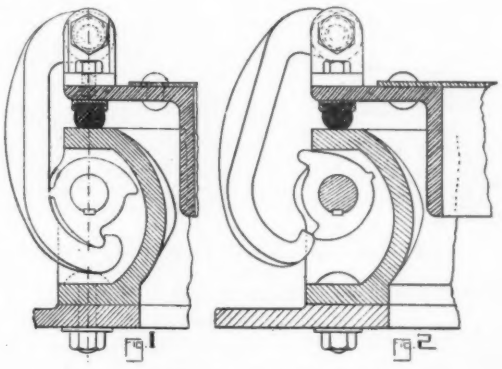
Purifier Lids.—No. 233,400.

CLAPHAM, T. A., and CLARE, R. J. W., both of Keighley.

No. 2819; Feb. 4, 1924.

This invention is for a means of securing the lids of gas purifiers of the well-known type.

Use is made of hooked links pivoted to the cover or lid of the purifier, or to brackets fixed thereon, and rotatable shafts with radial or cam-like projections; the shafts having bearings in the wall of the purifier or in the brackets, in such manner that the cams effect the operation of the links to bring the hooked extremities thereof beyond the plane in which lie the pivots of the links and the shafts. The shafts may each have a second radial projection against which the body of the link abuts when the lid is locked in position; this acting as a stop.



Locking Purifier Covers—Clapham and Clare.

A further "releasing" projection is provided on each of the rotatable shafts, this being so situated that, on the rotation of the shaft to unlock the hooked link, it advances into contact with the link and forces it outwardly to prevent its catching or partially locking itself.

The invention will be clearly understood from the drawings which we reproduce.

Coin-Freed Gas Meters.—No. 233,871.

METROPOLITAN GAS METERS, LTD., and FORSTER, J. D., both of Nottingham.

No. 10,777; May 1, 1924.

This invention relates to coin-freed meters of the kind in which a coin is supported at one portion of its periphery in a slot in a tumbler disc, and bears at the opposite portion against another disc in axial alignment with the former and between adjacent members

of a ring of teeth on the second disc, which is thus locked by the coin to the tumbler disc and will be rotated to adjust the meter mechanism. The tumbler disc is provided with a guide, or box, which directs a coin between two adjacent teeth on the toothed disc.

According to the present invention the box or guide is of a U or trough shape, having at one part a slot, so that it embraces the toothed ring in all positions to which it may be moved. This U-shaped guide is connected to the tumbler disc by means of inclined or diverging extensions secured on either side of the coin. The inner end of the guide so formed may be closed, thus providing a kind of pocket.

Thus, a coin proper to the apparatus will engage the slit in the tumbler disc and the teeth in the toothed disc, and the rotation of the former will ensure the rotation of the latter. A coin too small for the apparatus will merely enter the pocket without engaging the teeth. Also, the toothed ring is inaccessible for fraudulent manipulation.

Geysers.—No. 234,007.

Ewart, J. W., of Crouch End, N. 8.

No. 30,999; Dec. 24, 1924.

According to this invention, the water tray surrounding the vent pipe of a geyser is made integral therewith, and its outer edge or lip over which the water flows is detachably fitted to the upper edge of the cylinder forming the water jacket, and the top of the outer cylinder of the annular chamber is detachably fitted to the upper edge of the said cylinder. This construction of the tray and the top of the outer cylinder allows of their ready removal, and at the same time provides tight joints between them and the parts carrying them.

The horizontal passages through which the water flows from the water jacket into the annular chamber, instead of being arranged at the lower end of the said chamber, are now arranged at the upper end, to allow access thereto when the tray and the top of the outer cylinder are removed.

The condensation gutter is now made independent of the heater casing, and above or below the burner; being thus capable of easy removal.

Gas Ovens.—No. 234,292.

Glover, T., and Wayte, W. H., both of Norwich.

No. 14,266; June 12, 1924.

The invention, for gas ovens, comprises the employment within an outer casing of an oven chamber which is open at its lower end and closed at its upper end, and which is separated from the outer case by air spaces, one or more of which is or are used as a passage or passages along which hot gases can flow from the oven chamber to the outlet in the case.

The oven chamber is a separate unit which can conveniently be inserted within and removed from the outer case, so that the arrangement is particularly useful for the conversion of existing ovens.

After giving details of the construction, referring to diagrams, the patentees point out that the relative disposition of the parts is such that a space is left between the vertical sides, back, and top of the oven chamber and casing, and access is afforded to such spaces for the hot gases by perforations or gaps in the lower flanges of the oven chamber. Hot gases from the burners rise into the interior of the oven chamber, and circulate therefrom to the lower ends of the side or back spaces or both, up which they flow to the flue outlet near the top of the casing. While this is preferred, if desired the gases may escape at the lower end of the casing into the outer atmosphere, the spaces between the oven chamber and casing being then used to provide an air jacket for thermally insulating the oven chamber.

Locking Plug Taps.—No. 234,367.

Main, R. & A., Ltd., of Edmonton, N. 18, and Richardson, A. H., of Winchmore Hill, N. 21.

No. 25,262; Oct. 23, 1924.

This invention relates to a safety device for preventing unintentional turning of a gas plug-tap. The invention provides for a hinged flap suspended from a collar which embraces the supply pipe near the tap; and the catch piece is of such construction and comes into contact with the finger-piece of the tap in such position as to prevent the catch being thrown off when heavy pressure is applied to turn the tap.

APPLICATIONS FOR PATENTS.

[Extracted from the "Official Journal" for June 10.]

Nos. 14,234 to 14,788.

Adam, T. W.—"Prevention of caking of sulphate of ammonia." No. 14,506.

Brostrom, F. V.—"Gas burners." Nos. 14,315, 14,316.

Brostrom, F. V.—"Gas cocks." No. 14,317.

Brostrom, F. V.—"Gas pressure regulating device." No. 14,318.

Hammond, C. F.—"Gaseous fuel burners." No. 14,345.

Humphreys & Glasgow, Ltd.—"Automatic control means for gas-making apparatus." No. 14,690.

Jarvis, A.—See Adam, T. W. No. 14,506.

Kirkham, Hulett, & Chandler, Ltd.—"Apparatus for effecting intimate contact between liquids and gases." No. 14,416.

Marshall, F. D.—"Distillation, &c., of carbonaceous, &c., materials." Nos. 14,664, 14,709, 14,718.

Marwood, F. T.—"Gas cooking stoves." No. 14,732.

Mulholland, J.—"Incandescent gas fires." No. 14,402.

Pillinger, G. C.—"Supply and distribution of gas, &c." No. 14,321.

Slater, W. F.—See Kirkham, Hulett, & Chandler. No. 14,416.

Sunderland, L.—See Pillinger, G. C. No. 14,321.

Vidal, J. M.—"Apparatus for producing gas." No. 14,463.

PARLIAMENTARY INTELLIGENCE.

HOUSE OF LORDS.

Progress of Bills.

South Metropolitan Gas Bill: Read a second time, and committed.

Gas Light and Coke Company Bill: Read the third time, with the amendments, and passed; returned to the Commons.

Mansfield Corporation Bill: Read the third time, and passed; sent to the Commons.

Kilmarnock Gas and Water Provisional Order Bill: Read the third time, and passed.

A petition has been deposited on behalf of the London County Council against the South Metropolitan Gas Bill.

Gas Regulation Act.

Copies were presented of drafts of Special Orders proposed to be made by the Board of Trade under section 10 of the Act on the applications of the Colchester Gas Company and the Northampton Gaslight Company.

The draft Special Orders relating to the Trowbridge undertaking of the British Gas Light Company and the Haverfordwest Corporation were approved on the motion of the Earl of Clarendon on behalf of Viscount Peel.

HOUSE OF COMMONS.

Progress of Bills.

Blackpool Improvement, Oldham Corporation, and the Uckfield Gas and Electricity Bills: Read a second time, and committed.

Mansfield Corporation Bill: Read the first time, and referred to the Examiners.

On behalf of the Gas Light and Coke Company, a petition has been presented against the West Ham Corporation Bill.

MISCELLANEOUS NEWS.

ASSOCIATION OF STATUTORY INSPECTORS OF GAS METERS.

Annual General Meeting.

In the New County Hall, Westminster Bridge, S.W., on Wednesday, June 10, the annual general meeting was held of the Association of Statutory Inspectors of Gas Meters. Mr. H. N. Barrow, J.P. (Chairman of the Manchester Justices' Gas Meter Testing Committee), who is President of the Association, was in the chair.

By permission of the London County Council, and with the assistance of Mr. J. Ollis (a Vice-President of the Association), the afternoon was devoted to a visit to the Finsbury gas meter testing office. This testing office is one of the last to be installed, and the visit consequently proved both interesting and instructive.

The President, at the opening of the business proceedings in the morning, expressed his pleasure at seeing present so many representatives of authorities administering the Gas Measures Acts. The more the administrative authorities co-opted with the members of the Association, the better it would be for all of them. The authorities were most anxious to do their duty; and when there was co-operation with inspectors, who were now so well trained, and in every way thoroughly qualified for their work, the lay mind could get guidance from them in the carrying out of this duty. The Executive had held two meetings during the past year—one at Oldham and the other at Manchester; and he could assure them that the Association was going on in every way satisfactorily. Naturally, no great increase in the number of members was to be anticipated; but things were going along steadily.

The Hon. Secretary (Mr. W. Templeton, who is Chief Inspector at the City of Leeds gas meter testing station) read the minutes of the last meeting, and they were confirmed.

Consideration was then given to the annual report of the Council; the paragraphs being discussed *seriatim*.

Mr. George Hume (City of London), the Chairman of the Council, remarked that the regulations were working very well, and few controversial matters had cropped up during the year. The first paragraph of the report, which was in the following terms, did not require any explanation from him.

Meters with Novel or Unusual Features.

With regard to the question of receiving for examination and testing meters containing new or novel features, the Council were instructed at the last annual general meeting to communicate with the Board of Trade, with a view to the introduction of a statutory regulation dealing with this subject. The Council have considered this matter from various points of view; and there appears to be some difficulty in exactly defining new or novel features, and also in drafting a regulation in such form as properly to cover the matter and to assure uniformity of practice, and yet be sufficiently elastic to retain that individual discretion at present exercised by inspectors. The Council wish to have the considered opinion of the members before committing themselves further with the Board of Trade.

Mr. F. Coe (Nottingham) said he felt that, the Council having raised this question, the meeting should register its opinion that the opening of meters was not necessarily involved in this matter. No suggestion was made as to an alteration in the method of testing. These matters should be pointed out to the Board of Trade, in continuation of the correspondence that had been placed before the members. If then the Board did not see their way to make a regulation in accordance with their request, the Association would feel that they

had done what they could. He moved that they communicate with the Board of Trade to this effect.

Mr. H. WEBSTER (Brighton) saw no necessity for taking any further action in the matter.

Mr. W. KENYON (Sheffield) expressed the opinion that this question was very much bigger than it appeared at the moment to the members to be. He moved that a small deputation be appointed to confer with the Board of Trade, before the Association came to a final decision. The deputation, he suggested, should consist of the Chairman of the Council, the Vice-Chairman (Mr. S. B. Langlands), and the Hon. Secretary.

Mr. COE expressed his willingness to withdraw his own proposal in favour of this, if it better met the wishes of the meeting.

Mr. HUME said it was fairly obvious that the Board of Trade were not anxious to take up this matter and shoulder the responsibility In the meter that had raised the point it was not a question of measuring, but of prepayment attachment. If the members were seeking to become responsible for interfering with the automatic attachment, they would be taking on a very big thing. ["Hear, hear."] He thought it would be much better for them to remain where they were, and take no further action. The Board did not, he was sure, wish them to be responsible for the prepayment device. It was the opinion of the majority of the Council that they should take no further steps in the matter.

METERS FOR HOTEL BEDROOMS.

Mr. W. GORDON (Edinburgh), continuing the discussion of this paragraph, said that meters were now being supplied for hotel bedrooms, and similar situations; and they, as inspectors, were interested in the official badge being put on these meters. If they assented to the proposition that check meters need not have an official stamp, they would be doing wrong in the consumers' interests.

Mr. COE replied that his only idea was to let the Board know that the opening of meters was not involved in the Association's suggestion, and that they had in view no different method of testing from that which already existed.

After the resolution that a small deputation should wait upon the Board of Trade had been put to the meeting and negatived,

Mr. HUME remarked that Mr. Gordon's point was quite apart from the matter that had been under discussion. That gentleman raised the question as to whether hotel bedroom meters should come within the regulations of the Sales of Gas Act. So far as he himself was concerned, he believed that there was a difference of opinion on the matter.

Mr. S. B. LANGLANDS (Glasgow) said he thought the Act was fairly clear on the point. Section 13 of the Gas Regulation Act, 1920, was in the following terms:

> All meters by means of which gas is supplied by any undertakers to any consumer shall be stamped in accordance with regulations made by the Board of Trade under their powers in that behalf; and if any undertakers supply gas by means of any meter which is not so stamped, they shall be liable on summary conviction to a fine not exceeding ten pounds.

He held that the hotel proprietor became the "undertaker;" the person who used the measuring instrument was the undertaker.

FEES FOR TESTING HIGH-PRESSURE METERS.

The question was submitted to the Council as to what was the correct charge for examining and testing high-pressure meters. The Council drew attention to the fact that all high-pressure meters must be of a pattern certified by the Board of Trade before they shall be stamped; and the scale of fees should be in accordance with section 24, Gas Meter Regulations, 1920.

Mr. HUME remarked that they had no recognized way of charging. His own method was to charge double what he did for other meters; but this was entirely on his own initiative. The meter makers had not complained; but he would be glad of some ruling on the point.

Mr. F. COLBURN (Birmingham) said his charges were based on the capacity per hour, *plus* a testing fee of 3s. 6d. for the high-pressure index.

Mr. HUME pointed out that the Council thought the best method would be to include any additional charge that might be fixed upon in the supplementary memorandum which was issued by the Board of Trade.

Mr. F. A. ROLFE (London County Council) said it was not legal to charge anything beyond the ordinary testing fee; and something should be done to remedy this defect. The expenditure of an additional amount of time was involved; and the position was a most unsatisfactory one.

It was resolved that the Board of Trade be asked to include in their supplementary memorandum a charge for testing high-pressure meters.

REGULATIONS.

A memorandum was submitted to the Council requesting their interpretation of certain of the regulations. The question raised was as to whether a "Standard" meter should be regarded as a normal meter or as "unduly highly rated." After considerable discussion, it was decided to obtain statistics with regard to the testing of "Standard" meters from various offices; and the result of these figures confirmed the opinion of the majority of the Council. They recommend that "Standard" meters may be regarded as normal meters, and need not be considered as "unduly highly rated."

Mr. HUME said that with new "Standard" meters they had come to the conclusion that it was not necessary to have a double test. The report was that it was a very satisfactory meter. Of course, in the near future conditions might be so altered as to necessitate the amendment of this conclusion.

Mr. E. M. FOSTER (Exeter) thought they ought to have a rule, perhaps based upon the number of revolutions per hour. The meter should not be allowed more than a certain number of revolutions per hour without being marked "unduly highly rated."

Mr. COLBURN stated that, generally, there would not be 1 p.ct. of the new "Standard" meters rejected on the slow-speed test.

Mr. LANGLANDS said it was not the new "Standard" meters which came in for testing that weighed with him, but those which had been in use on the district.

Mr. S. WINTERBOTTOM (Manchester) told the meeting that out of 20,000 odd meters, his rejections were less than 1 p.ct.

Mr. G. W. KAY (Oldham) said he believed he tested a gross, and so little difference was found between the two tests of high rate and low rate that it was thought not to be worth while to go any further. He did not believe they rejected more than 1 out of the gross; and the time taken over two tests was not therefore justified.

Mr. F. W. DALTON (Liverpool) said that, with regard to testing meters at a lower rate than capacity, he so treated all dry meters—new, repaired, and old. They were tested at capacity, and also at one-sixth of their capacity; and it was found that the percentage of rejections of new "Standard" meters was very low. In the case of repaired meters, however, the percentage was much higher. In his office they tested about 36,000 meters a year, of which 20,000 were dry meters. It was found that the percentage of rejections of new and repaired meters was well over 5 p.ct. If, when new, a meter was tested at capacity and also at a lower rate, the chances of it being wrong when it came back after a few years were very much less than would be the case if in the first instance it had been tested only at capacity. A meter should register accurately when it was working at any rate within reason.

Mr. HUME added that in his own case disputed meters that came in from the district were generally put through two tests.

Mr. GORDON thought that, if they continued to have two tests at their own discretion, the valves might be set with greater care than if it became known to the makers that the meter was going to be tested only at full capacity. Therefore they should retain their discretion in the matter of testing.

This clause was agreed to.

10 C.FT. CIRCLE.

The Council were requested to consider whether it was desirable to approach the various interests concerned with regard to the introduction of a 10 c.ft. circle in all new dry meters, as a means of preventing meters with wrong dial plates, &c., getting stamped, which might possibly pass undetected in the ordinary way. The Council are decidedly of opinion that it is not desirable to re-open the question of the testing of indices, and a majority of the Council consider that the benefits to be derived from the introduction of the 10 c.ft. circle do not justify the demand for the compulsory adoption of this innovation.

Mr. DALTON pointed out that quite a number of meters had this 10 c.ft. circle, and that it was a great advantage to inspectors, who had a far better chance of seeing whether the meter index itself was registering properly.

Mr. COE suggested that, by the bringing forward of this matter, meter makers might be influenced to adopt the 10 c.ft. circle as stocks were replenished.

The clause was agreed to, as also was the following:

PUBLICITY.

A proposal was made that the Council should consider the desirability of circulating any item of general interest relating to gas meters and gas-meter testing that appears in the Technical and Daily Press. The Council, however, are of the opinion that the Technical Press is a sufficient medium for the needs, and that the purpose served by circulating news items would not justify the expenditure involved.

OFFICE BEARERS.

The HON. TREASURER (Mr. J. L. Barry) reported a satisfactory financial statement; the balance in hand being over £15.

The following office bearers and Council were next elected or re-elected:

President.—Mr. H. N. Barrow (Manchester)

Vice-Presidents.—Mrs. Councillor Shutte (Salford), Mr. J. Ollis (London), Bailie G. Gott (Glasgow), Bailie Buchanan (Edinburgh), Mr. C. Chambers (Birmingham), Mr. E. J. Gibbon Newcastle-on-Tyne), Alderman Vokes (Southampton), Councillor F. Unwin (Sheffield), Alderman P. R. Gayton (Exeter), and Mr. S. Dyson (Manchester).

Executive Council.—Mr. G. Hume (London), Mr. W. Kenyon (Sheffield), Mr. G. W. Kay (Oldham), Mr. F. Coe (Nottingham), Mr. S. Winterbottom (Manchester), Mr. S. B. Langlands (Glasgow), and Mr. W. Gordon (Edinburgh).

Hon. Secretary.—Mr. W. Templeton.

Hon. Treasurer.—Mr. J. L. Barry.

MR. OLLIS'S RETIREMENT.

The PRESIDENT said that in a very short time they would be deprived of the valuable help of one who had taken a great interest in the Association. He referred to Mr. J. Ollis, of the London County Council, who would soon be retiring. They all knew how greatly he had endeared himself to the members.

Mr. HUME proposed:

> "That this Association desire to convey to their Vice-President, Mr. James Ollis, Chief Officer, Public Control Department, London County Council, their best wishes on the occasion of his retirement from his office with the London County Council, and to express their appreciation of his assistance to the Association and unfailing kindness at all times."

Having been associated with Mr. Ollis for 28 years, he considered it a great privilege to move this resolution. They were much indebted to him for his help in framing the regulations which were in operation to-day.

Mr. LANGLANDS seconded the motion, and expressed his own high appreciation of Mr. Ollis's work.

Mr. CHAMBERS, on behalf of the administrative authorities, supported the resolution, which was unanimously passed.

The London County Council were thanked for the loan of the meeting room; and it was decided that next year's meeting should take place in Glasgow.

GAS REGULATION ACT APPLICATIONS.

The following notices have appeared in the "London Gazette" regarding applications to the Board of Trade under the Act.

SPECIAL ORDERS

Bideford Gas and Coke Company, Ltd.

To enable the Company to raise further capital, to make further provisions as to dividend and as to the supply of gas, and for other purposes.

Ilkeston Corporation.

To authorize the Corporation to supply gas in the parishes of Kirk Hallam and Shipley, to charge for gas on the thermal basis, to borrow money, and to make further provisions with regard to the supply of gas.

Ludlow Union Gas Company, Ltd.

To empower the Company to maintain and continue gas-works, to manufacture and supply gas, to raise additional capital, and for other purposes.

DECLARATION OF CALORIFIC POWER.

Sutton Gas Company.—500 B.Th.U., in substitution for 480 B.Th.U. (Oct. 1.)

Stretford and District Gas Board.—500 B.Th.U. (July 1.)

BIRMINGHAM GAS DEPARTMENT.

Question of Increased Charges.

The Birmingham City Council, at their meeting last week, debated the proposal of the Gas Committee that, as from the June readings of the meters, the price of gas be increased from 2s. 10d. to 3s. 2d. per 1000 c.ft.

Alderman J. H. LLOYD (the Chairman of the Gas Committee), who presented the report, pointed out that the Corporation had to look forward to a continuation during the present year of poor markets, not only for tar and ammonia, but also for coke, and were compelled, as were many other gas undertakings, to increase their prices to meet actual and prospective losses. Even with the increase proposed, their prices, notwithstanding their distance from the pits from which gas coal was obtained, compared very favourably with other undertakings in the country. Though at the moment there was little prospect of an alteration in the residual markets in their favour, the price of gas would be reviewed as soon as circumstances permitted. He complained of the action of the Finance Committee in calling upon the Department to make a contribution to the relief of the rates. This was done by drawing from reserves.

Alderman LANCASTER moved as an amendment that the following be added to the resolution:

> And the Gas Committee be instructed to inquire and report to the Council at an early date on the following matters: (1) The excessive staff and overhead charges of the Department. (2) What gas is being supplied to consumers at under cost price, and why. (3) Why a manufacturer using 1,000,000 c.ft. for power should be charged 5d. per 1000 c.ft. more than one using 5,000,000 c.ft. (4) Why should gas used for lighting be charged 4d. per 1000 c.ft. more than an equal quantity used for power. (5) What expenditure of a capital nature during the last few years has been charged to revenue.

He criticized the general scale of gas charges, and urged that no gas ought to be supplied by the Corporation to any consumer at less (to say the least) than its net cost price, because if this were done it meant that the other consumers had to pay more than they ought in order to balance the loss. The Gas Department for years had been using revenue for what should have been capital expenditure: and as a result the consumers of gas had to pay more than they should be paying.

Mr. THACKER, who is a master gasfitter, supported the amendment. He served his apprenticeship with the Gas Department, and knew there were many ways in which economies could be effected. He wondered, for instance, why gas fires and cookers were fixed free of charge. There were other services rendered free. For clearing the house pipes a charge of 2s. 6d. was made for work that must cost on an average about 10s. to 12s., and in some cases as much as £2.

Alderman LLOYD, in reply, said the Gas Department in the past fifty years had benefited the city to the extent of £2,000,000. Birmingham was not the only place where they had had a bad time. No gas was being sold below cost except for public lighting, and thereby the Gas Department saved the city £24,000 a year—a penny rate.

The amendment was carried.

THE DEPARTMENT'S JUBILEE.

Alderman LLOYD, in moving the adoption of the report as amended, said one gratifying feature of the accounts was the increase in the consumption of gas of 5·35 p.ct. During the year 810,000 tons of coal had been carbonized, as compared with 799,000 tons in the previous year; and 1,735,000 gallons of gas oil had been used in the manufacture of carburetted water gas, as compared with 2,133,000 gallons. The total quantity of gas sold was 12,659 million c.ft., and was a record. The remarkable demand for apparatus of all kinds, both for domestic and industrial use, still continued, and indicated that, unless the unfortunate necessity for increasing the price had a deterrent effect, there was likely to be an even greater consumption of gas during the ensuing year. This was the fiftieth anniversary of the acquisition of the gas undertaking by the Corporation, and undoubtedly the City Council must be gratified with the size and importance it had assumed, and the ever-increasing service it was rendering to the community. Theirs was the largest provincial gas undertaking in the United Kingdom. In all probability a recommendation would be submitted at a future meeting of the Council for an application to be made to the Board of Trade for an Order involving a charge for gas by the therm.

The report as amended was approved.

MALTA AND MEDITERRANEAN GAS COMPANY, LTD.

A Satisfactory Statement.

The Ordinary General Meeting of the Company was held on Tuesday of last week, at the London Offices, Nos. 59 and 60, Gracechurch Street, E.C.—Mr. A. M. PADDON (the Chairman) presiding.

The SECRETARY (Mr. C. J. Daun) read the notice convening the meeting and the Auditors' certificate; and the Directors' report and the statement of accounts were taken as read.

The CHAIRMAN, in moving the adoption of the report and accounts, said the shareholders would have seen that there was nothing but what was of a strictly formal character in the report itself. All matters of ancillary concern were in the accounts, and a remarkable feature of these accounts subsisted in their very close resemblance to those of twelve months ago. In certain respects they were more favourable, because a year ago the figures were based upon a price of gas as between 8s. 6d. and 7s. 10d. per 1000 c.ft., whereas to-day the results were built up on charges ranging from 7s. 10d. to 7s. 6d. per 1000 c.ft.—in other words, a difference of 1s. per 1000 c.ft. This, of course, must have its immediate effect upon the amount received for gas; and this figure had decreased—as he said, necessarily—by £1858. Now, the amount of gas sold, within a small fraction, was exactly the same as that sold twelve months ago; but, notwithstanding this, there had been a gain under the head of receipts from residuals of £400 odd out of the depleted amount he had mentioned; and from fittings, meters, and other subordinate charges another £400 had been accreted. So that the falling off of £1800 was reduced by these additions to something approximating £1000. One of the most gratifying features of the present statement was that the unaccounted-for gas had been reduced by nearly 3 p.ct. One of the proprietors had made complaint of this twelve months ago; and an assurance was then given him that the matter was receiving the attention of the Board and officers. This process was being continued, so that at the present moment the unaccounted-for gas, notwithstanding exceptional disabilities at Malta, was not much higher than would be the case in this country with an undertaking of similar size. As a matter of fact, the figure was down to under 10 p.ct.; and considering the scattered nature of the district, and the way in which the supply per mile of main had been reduced by the very keen electrical competition to which the Company were subjected, he did not think the proprietors could look for the percentage to be very much less than the figure which had now been attained, though endeavours would be unremitting to reduce it still further. Of course, a very much better criterion of the real nature of the working than this was the amount of gas sold per ton of coal carbonized. The percentage of unaccounted-for gas must in a sense be an estimated figure; but when they took the sale of gas per ton, they got to something absolutely final, and this stood at a highly creditable figure in the accounts. On the debit side of the statement, coal had cost them £1574 less, and manufacturing charges had been reduced by nearly £100; but they had expended a little more lavishly upon maintenance of works, which was increased by some £1600. There had been a reduction of over £300 in the appropriation for corporation profits tax, which now figured at £110. He thought this was rather a matter of technical accountancy, because it should have disappeared, and would inevitably disappear from the next account. Turning to the general balance-sheet, it would be seen that the amount available was adequate to meet all their requirements.

A SOUND FINANCIAL POSITION.

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GAS JOURNAL

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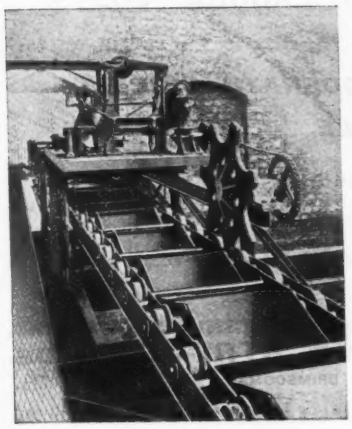

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GAS REGULATION ACT APPLICATIONS.

The following notices have appeared in the "London Gazette" regarding applications to the Board of Trade under the Act.

SPECIAL ORDERS

Bideford Gas and Coke Company, Ltd.

To enable the Company to raise further capital, to make further provisions as to dividend and as to the supply of gas, and for other purposes.

Ilkeston Corporation.

To authorize the Corporation to supply gas in the parishes of Kirk Hallam and Shipley, to charge for gas on the thermal basis, to borrow money, and to make further provisions with regard to the supply of gas.

Ludlow Union Gas Company, Ltd.

To empower the Company to maintain and continue gas-works, to manufacture and supply gas, to raise additional capital, and for other purposes.

DECLARATION OF CALORIFIC POWER.

Sutton Gas Company.—500 B.Th.U., in substitution for 480 B.Th.U. (Oct. 1.)

Stretford and District Gas Board.—500 B.Th.U. (July 1.)

BIRMINGHAM GAS DEPARTMENT.

Question of Increased Charges.

The Birmingham City Council, at their meeting last week, debated the proposal of the Gas Committee that, as from the June readings of the meters, the price of gas be increased from 2s. 10d. to 3s. 2d. per 1000 c.ft.

Alderman J. H. LLOYD (the Chairman of the Gas Committee), who presented the report, pointed out that the Corporation had to look forward to a continuation during the present year of poor markets, not only for tar and ammonia, but also for coke, and were compelled, as were many other gas undertakings, to increase their prices to meet actual and prospective losses. Even with the increase proposed, their prices, notwithstanding their distance from the pits from which gas coal was obtained, compared very favourably with other undertakings in the country. Though at the moment there was little prospect of an alteration in the residual markets in their favour, the price of gas would be reviewed as soon as circumstances permitted. He complained of the action of the Finance Committee in calling upon the Department to make a contribution to the relief of the rates. This was done by drawing from reserves.

Alderman LANCASTER moved as an amendment that the following be added to the resolution:

> And the Gas Committee be instructed to inquire and report to the Council at an early date on the following matters: (1) The excessive staff and overhead charges of the Department. (2) What gas is being supplied to consumers at under cost price, and why. (3) Why a manufacturer using 1,000,000 c.ft. for power should be charged 5d. per 1000 c.ft. more than one using 5,000,000 c.ft. (4) Why should gas used for lighting be charged 4d. per 1000 c.ft. more than an equal quantity used for power. (5) What expenditure of a capital nature during the last few years has been charged to revenue.

He criticized the general scale of gas charges, and urged that no gas ought to be supplied by the Corporation to any consumer at less (to say the least) than its net cost price, because if this were done it meant that the other consumers had to pay more than they ought in order to balance the loss. The Gas Department for years had been using revenue for what should have been capital expenditure; and as a result the consumers of gas had to pay more than they should be paying.

Mr. THACKER, who is a master gasfitter, supported the amendment. He served his apprenticeship with the Gas Department, and knew there were many ways in which economies could be effected. He wondered, for instance, why gas fires and cookers were fixed free of charge. There were other services rendered free. For clearing the house pipes a charge of 2s. 6d. was made for work that must cost on an average about 10s. to 12s., and in some cases as much as £2.

Alderman LLOYD, in reply, said the Gas Department in the past fifty years had benefited the city to the extent of £2,000,000. Birmingham was not the only place where they had had a bad time. No gas was being sold below cost except for public lighting, and thereby the Gas Department saved the city £24,000 a year—a penny rate.

The amendment was carried.

THE DEPARTMENT'S JUBILEE.

Alderman LLOYD, in moving the adoption of the report as amended, said one gratifying feature of the accounts was the increase in the consumption of gas of 5·35 p.ct. During the year 810,000 tons of coal had been carbonized, as compared with 799,000 tons in the previous year; and 1,735,000 gallons of gas oil had been used in the manufacture of carburetted water gas, as compared with 2,133,000 gallons. The total quantity of gas sold was 12,659 million c.ft., and was a record. The remarkable demand for apparatus of all kinds, both for domestic and industrial use, still continued, and indicated that, unless the unfortunate necessity for increasing the price had a deterrent effect, there was likely to be an even greater consumption of gas during the ensuing year. This was the fiftieth anniversary of the acquisition of the gas undertaking by the Corporation, and undoubtedly the City Council must be gratified with the size and importance it had assumed, and the ever-increasing service it was rendering to the community. Theirs was the largest provincial gas undertaking in the United Kingdom. In all probability a recommendation would be submitted at a future meeting of the Council for an application to be made to the Board of Trade for an Order involving a charge for gas by the therm.

The report as amended was approved.

MALTA AND MEDITERRANEAN GAS COMPANY, LTD.

A Satisfactory Statement.

The Ordinary General Meeting of the Company was held on Tuesday of last week, at the London Offices, Nos. 59 and 60, Gracechurch Street, E.C.—Mr. A. M. PADDON (the Chairman) presiding.

The SECRETARY (Mr. C. J. Daun) read the notice convening the meeting and the Auditors' certificate; and the Directors' report and the statement of accounts were taken as read.

The CHAIRMAN, in moving the adoption of the report and accounts, said the shareholders would have seen that there was nothing but what was of a strictly formal character in the report itself. All matters of ancillary concern were in the accounts, and a remarkable feature of these accounts subsisted in their very close resemblance to those of twelve months ago. In certain respects they were more favourable, because a year ago the figures were based upon a price of gas as between 8s. 6d. and 7s. 10d. per 1000 c.ft., whereas to-day the results were built up on charges ranging from 7s. 10d. to 7s. 6d. per 1000 c.ft.—in other words, a difference of 1s. per 1000 c.ft. This, of course, must have its immediate effect upon the amount received for gas; and this figure had decreased—as he said, necessarily—by £1858. Now, the amount of gas sold, within a small fraction, was exactly the same as that sold twelve months ago; but, notwithstanding this, there had been a gain under the head of receipts from residuals of £400 odd out of the depleted amount he had mentioned; and from fittings, meters, and other subordinate charges another £400 had been accreted. So that the falling off of £1800 was reduced by these additions to something approximating £1000. One of the most gratifying features of the present statement was that the unaccounted-for gas had been reduced by nearly 3 p.ct. One of the proprietors had made complaint of this twelve months ago; and an assurance was then given him that the matter was receiving the attention of the Board and officers. This process was being continued, so that at the present moment the unaccounted-for gas, notwithstanding exceptional disabilities at Malta, was not much higher than would be the case in this country with an undertaking of similar size. As a matter of fact, the figure was down to under 10 p.ct.; and considering the scattered nature of the district, and the way in which the supply per mile of main had been reduced by the very keen electrical competition to which the Company were subjected, he did not think the proprietors could look for the percentage to be very much less than the figure which had now been attained, though endeavours would be unremitting to reduce it still further. Of course, a very much better criterion of the real nature of the working than this was the amount of gas sold per ton of coal carbonized. The percentage of unaccounted-for gas must in a sense be an estimated figure; but when they took the sale of gas per ton, they got to something absolutely final, and this stood at a highly creditable figure in the accounts. On the debit side of the statement, coal had cost them £1574 less, and manufacturing charges had been reduced by nearly £100; but they had expended a little more lavishly upon maintenance of works, which was increased by some £1600. There had been a reduction of over £300 in the appropriation for corporation profits tax, which now figured at £110. He thought this was rather a matter of technical accountancy, because it should have disappeared, and would inevitably disappear from the next account. Turning to the general balance-sheet, it would be seen that the amount available was adequate to meet all their requirements.

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ment and electricity; but he thought it did not bode particularly well for an industry when the Government took a hand in it. He did not believe that those who formed the fanciful ideas of which one now heard would translate their expectations into tangible results.

Mr. A. W. OKE seconded the motion, which was carried unanimously without discussion.

The CHAIRMAN next moved: "That a dividend of 3¼ p.ct. (making, with the interim dividend paid in December last, 6 p.ct. for the year), free of income-tax, be declared on the ordinary shares, and dividends of 3½ p.ct. and 3¾ p.ct., less income-tax, be declared on the first and second preference shares respectively."

Mr. STRACHAN C. CLARKE seconded the proposition, which was agreed to.

The retiring Director (Mr. E. L. Burton, F.S.A.A.) was re-elected, on the proposition of the CHAIRMAN, seconded by Mr. F. R. SMITH; and the Auditors (Messrs. William Cash, F.C.A., and Mr. Hyde C. Burton, A.C.A.) were similarly reappointed, on the motion of Mr. SMITH, seconded by Mr. F. W. CHURCH.

Mr. W. H. DODGSON said he was assured of the support of all the proprietors in proposing a hearty vote of thanks to the Chairman, Directors, and officers of the Company for their services during the past year. The results recorded were most excellent; and he was glad to hear that the Company's prospects were still favourable.

Mr. CHURCH seconded the proposition, which was heartily agreed to.

The CHAIRMAN, acknowledging the vote, remarked that the strength of the undertaking really depended upon the excellence of the working results. Personally, with an extensive experience of gas undertakings, he had never known better working results than those which came in month by month from their Malta Station. The efforts of the Board and the officers would be directed towards the maintenance of these results.

GAS DEVELOPMENT AT NANTWICH.

The coming-of-age of the Nantwich gas undertaking as a publicly-owned concern was celebrated by the installation of an important new carbonizing plant, which, on June 17, was inspected by about sixty visitors, who were afterwards entertained to luncheon.

Assembling at the works, the visitors were welcomed by Mr. James Bowyer, Chairman of the Council, and Mr. A. Rollings, Chairman of the Gas and Lighting Committee, who expressed the hope that the inauguration of the latest plant would mark the commencement of a new era of success for the undertaking.

The retort bench consists of four through beds of 24 in. by 16 in. D-section retorts 16 ft. long. The settings are of Gibbons and Masters' latest tube regenerative pattern, with the Sydenham grate. A separate house has been built for a 25-KW. gas-engine driven electrical generator. The plant has an approximate gas-making capacity of 350,000 c.ft. per day.

Luncheon was served at the Brine Baths Hotel, where Mr. James Bowyer presided. He was supported by Mr. A. Rollings (Chairman of the Gas Committee) and Mr. A. Mackay (Chief Gas Engineer for Stoke-on-Trent).

Mr. A. MACKAY proposed the toast of "The Nantwich Urban District Council and the Gas Undertaking," and heartily congratulated the Council upon their progressive step. He complimented Mr. Vernon (the Manager of the works) on the work he had carried through in preparing the scheme, and said the ratepayers should be grateful to the Council for having taken a step which would lead to a cheapening of the gas supply.

Mr. A. ROLLINGS, in response, traced the history of the gas undertaking in Nantwich, and mentioned that the total cost to date, including the new plant and working capital, was £100,600. During the time the ratepayers had been the owners, £35,783 had been paid off, leaving a balance of £64,817; and the prospect for the undertaking was now considerably brighter. He announced that the Gas Committee had decided upon a reduction in the price of gas. Basing his estimate on last year's consumption, he said the total saving to consumers would be about £1700 a year.

Mr. C. S. BENNETT, replying to the tribute paid to the contractors, said he was convinced that the town would reap great benefits from bringing their works up to date. The work could not have been carried through so well but for the co-operation of Mr. Vernon.

TRADE NOTES.

Spencer-Bonecourt Kirke Boilers and Superheaters.

Messrs. Spencer-Bonecourt, Ltd., of London and Hitchin, have brought out an enlarged second edition of their catalogue of the Kirke boiler, which will doubtless be of interest to many readers of the "JOURNAL."

Gas-Works Plant.

The Koppers Coke Oven Company, Ltd., of No. 301, Glossop Road, Sheffield, have published a booklet in which they describe the gas plant which they manufacture. It is an excellent publication, and will prove of value to gas engineers.

The "Mainstay" Cooker.

Messrs. R. & A. Main, Ltd., of London and Falkirk, have published a very interesting booklet entitled "The Story of the Mainstay Cooker." Both the illustrations and the text have been excellently prepared; and the publication as a whole does credit to the firm.

Smoke-Consuming Door.

Messrs. Meldrums, Ltd., of Timperley, have brought out a smoke-consuming door to take the place of the ordinary firing door fitted on vertical and Cochran boilers. It consists of a double-walled door having steam jets over and along a top opening. These jets deliver secondary air down and through the inside of the door just at the point of combustion. The jets need only be in operation for a half to one minute after a fresh charge of fuel.

NORTH-EAST COAST COAL TRADE.

From our Own Correspondent.

Although present indications are pointing to the serious possibility of trouble and stoppages in the coal trade, there is a general feeling of relief that at any rate a crisis is approaching of the present situation, which has become quite hopeless. Pits have, for some considerable time, been closing on all sides, and still the demand is far from adequate to meet the supplies available from those collieries which are struggling on, and it has long been obvious that, except for something quite unexpected turning up, no improvement could be looked for on the basis of present costs.

It is to be hoped that the uncertainty will not last long, and that something definite will speedily be evolved to put an end to the present position, which is intolerable alike to owners and men.

In the meantime, judging from previous experience, there is more than likely to be some stiffening in the demand, though stocks on every hand are reported to be so high that it can hardly be expected to be of much account. This week is the great annual Newcastle Race Week holiday, and the Exchange will be closed half-days each day.

Closing quotations for gas coals were nominally 18s. 9d. f.o.b. for Wear Specials, and 18s. for best qualities. Seconds were 15s. 6d., but at these prices were probably discountable for prompt and definite business. Coking makes were very weak, and best Durham bunkers were obtainable at 16s. 3d.

COAL TRADE IN THE MIDLANDS.

From our Local Correspondent.

Collieries are not inclined to yield to the pressure of those gas engineers who have withheld their contracts till the last moment in the hope of getting yet larger concessions. Business has been done at 3s., and in some cases 3s. 6d., below the old contract rates; lower than this the collieries will not go. There is little change to record in the general market position. Smalls have firmed up to the extent of about 6d. as a consequence of the drastic reduction of output which has been effected. Demand continues to decrease, and values can only be steadied by making a corresponding readjustment of supplies. The expiration of the agreement between the owners and the miners is apathetically awaited. So far as the gas undertakings are concerned they probably never had larger reserves. Stocks in other directions are considerable having regard to the slow rate of consumption.

Industrialists who have accommodation for stacking fuel are generally well insured against contingencies. Those who need to replenish every week or fortnight betray no anxiety as to the continuity of supplies. Nobody believes a national hold-up is imminent. The calmness of the market has been undisturbed throughout the protracted negotiations on the labour question. What most industrialists feel is that, if the cost of coal cannot be stabilized on a substantially lower basis than has prevailed till recently, it does not matter very much what happens: a trade revival is not to be hoped for, and many of the works may as well be closed as kept going in the unprofitable conditions to which they have been reduced.

YORKSHIRE AND LANCASHIRE COAL TRADE.

From our Local Correspondent.

There is a great deal of uncertainty in regard to the future prospects of the coal trade by reason of the fact that present prices do not warrant collieries producing the lower grade fuels continuing operations. What effect this will have on the prices of available supplies remains to be seen. So far, the negotiations between the owners and the miners have not led to any enlightenment.

Gas coals are moving spasmodically with no standardized rates for forward delivery, and contracts are being fixed up at varying rates in accordance with local circumstances. The possibility of a strike may lead to a shortening of the market, but any stoppage will not be of such a prolonged nature as to inconvenience the consumers.

House coals are moving slowly, while industrially there is no improvement in the demand; so that as a result fuels for prompt delivery are available at discounted rates. There is no improvement in the export section. In Lancashire there is a moderate demand for industrial coal. Prices are unchanged; but there is a good deal of outside slack coming in at from 10s. to 12s. per ton. For high-class Lancashire slacks from 15s. to 16s. at the pits is asked.

Hull prices at the week-end were: South Yorkshire.—Hards, Association, 19s. 3d. to 19s. 6d.; screened gas coal, 16s. 6d. to 17s. 6d.; washed trebles, 17s. to 17s. 6d.; washed doubles, 16s. to 16s. 6d.; washed singles, 15s.; washed smalls, 11s.; unwashed doubles, 15s.; rough slack, 10s.; smithy peas, 16s. 6d. to 18s. 6d. West Yorkshire.—Hartleys, 15s. to 17s.; screened gas coal, 16s.; washed trebles, 16s. 6d. to 17s.; washed doubles, 14s. 6d. to 15s.; washed singles, 13s. 6d. to 14s.; washed smalls, 10s. to 11s.; unwashed trebles, 15s.; unwashed doubles, 12s. to 13s.; rough slack, 9s. 6d.; coking smalls, 9s. to 10s. Derbyshire and Notts.—Top hards, 19s. 3d. to 20s.; washed trebles, 17s. to 17s. 6d.; washed doubles, 15s.; washed singles, 14s.; washed smalls, 9s. 6d.; unwashed doubles, 13s. 6d. to 14s. 6d.; rough slack, 9s. 3d. to 9s. 9d. Yorkshire, Derby, and Notts.—Screened steam coal, 15s. to 16s.; gas coke, 19s. to 20s.; furnace coke, 17s. per ton.

James Keith & Blackman.—The Directors in their report state that the amount of business done during the year to March 31 last was greater than that of the previous year. After providing for debenture interest, preference dividend, and making sufficient allowance for depreciation and reserves against doubtful debts, the accounts show an available balance of £31,638. The Directors recommend a dividend on the ordinary shares of 10 p.ct., less tax, and the transfer to reserve of £5000, carrying forward £11,138.

CURRENT SALES OF GAS PRODUCTS.

The London Market for Tar, Tar Products, and Sulphate.

LONDON, *June* 22.

The position of pitch continues unchanged, and the price remains nominal at about 41s. to 42s. per ton.

In the meantime, the demand for road tar continues unabated; most makers being exceedingly busy with orders.

Creosote is steady and unchanged at about 7d. per gallon net, in bulk.

Solvent naphtha is in short supply at about 1s. 8d. per gallon for 95/160 quality.

Pure benzole and pure toluole are firm at 1s. 11d. to 2s. per gallon.

Tar Products in the Provinces.

June 22.

There is little fresh to report concerning the markets for tar products.

In pitch there have been a few inquiries during the past week, but little business is reported.

Creosote appears to be steady.

Benzoles and solvent naphtha are in fair demand.

In crude carbolic one or two sales are reported at low prices.

The average values for gas-works products during last week were: Gas-works coal-tar, 26s. to 31s. Pitch, East Coast, 39s. to 40s. f.o.b. West Coast—Manchester, 34s. to 35s.; Liverpool, 35s. to 36s.; Clyde, 38s. to 39s.; Benzole, 90 p.ct., North, 1s. 7½d. to 1s. 8½d.; crude, 65 p.ct. at 120° C., 1s. to 1s. 1d., naked at makers' works; 50-90 p.ct., naked, North, 1s. 7½d. to 1s. 8½d. Toluole, naked, North, 1s. 6½d. to 1s. 7½d. nominal. Coal-tar crude naphtha, in bulk, North, 7½d. to 8½d. Solvent naphtha, naked, North, 1s. 5d. to 1s. 6d. Heavy naphtha, North, 1s. to 1s. 2d. Creosote, in bulk, North, liquid, 5⅜d. to 6d.; salty, 5⅛d. to 5⅜d.; Scotland, 5¼d. to 5⅝d. Heavy oils, in bulk, North, 6½d. to 7d. Carbolic acid, 1s. 5d. to 1s. 6d. prompt. Naphthalene, £11 to £14; salts, £4 to £5, bags included. Anthracene, "A" quality, 2½d. per minimum 40 p.ct., purely nominal; "B" quality unsaleable.

At a meeting of the Council of the Midland Branch of the National Union of Manufacturers at Birmingham last week, concern was expressed at the proposed raising of the price of gas in the city. One local firm wrote that a rise of 3d. to 4d. per 1000 c.ft. would cost them from £300 to £400 per year extra. It was agreed to write to the Lord Mayor calling attention to the fact that the rise might induce certain manufacturers and large consumers to put down their own gas-producing plant, in which case the price would have to be raised to the general public, and asking whether some differentiation in the price could not be made in favour of large consumers and manufacturers.

CONTRACTS OPEN.

Coal.

The Haverhill Urban District Council are inviting tenders for the supply of 1500 tons of best gas coal. [See advert. on p. 1038.]

The Urban District Council of Colwyn Bay and Colwyn are inviting tenders for the supply of coal for gas making purposes. [See advert. on p. 1038.]

The Gas Committee of the Borough of Clitheroe are inviting tenders for the supply of 8000 tons of gas nuts, unscreened coal, and rough dry slack. [See advert. on p. 1038.]

Excavating, Laying, and Reinstating Pipes.

Tenders are invited by the Lancaster Corporation Gas Department for excavating, laying, and reinstating 1500 yards of 18-in. gas-mains. [See advert. on p. 1038.]

Pipes (Steam and Gas).

The Town Council of Middleton are inviting tenders for cast iron socket and spigot pipes and wrought iron steam tubes and fittings. [See advert. on p. 1038.]

Gas Week in Kendal.—The Kendal Corporation Gas and Water Department are to be congratulated on the excellent exhibition which they are holding this week in the Town Hall, Kendal. Opened on Monday last by Alderman J. J. Thomas, J.P. (the Chairman of the Gas and Water Committee), the exhibition is attracting a large number of visitors. Richmond's popular "Bungalow" and "Ranelagh" cookers are conspicuous among a wide selection of cooking, water heating, and heating equipment manufactured by the Richmond Gas Stove and Meter Company, Ltd., and supplied by the Corporation on special cash and hire-purchase terms. No charge is being made for fixing. Cookery lectures and demonstrations are being given each afternoon and evening.

Successful Year at Hinckley.—The Hinckley Gas-Works last year made a net profit of £3092, besides reducing the price of gas by 4d. per 1000 c.ft. "The working results were never better, and constituted a record in every respect," said Mr. F. Burton (the Chairman of the Committee) in presenting the statement of accounts for the year ended March 31. While the cost of coal and wages (which represented 83 p.ct. of the working expenses) was over 100 p.ct. higher than in 1913, the average price charged for gas was only 33 p.ct. more. The gas sold was 164,777,700 c.ft., as compared with 155,270,400 c.ft. in the previous year; while the quantity unaccounted for was only 1·44 p.ct.—the lowest figure on record, except in 1913, when it was 1·4 p.ct. Mr. Bott said that the Council and the town had reason to congratulate themselves when they read of neighbouring towns being faced with an increase in the price of gas. Thanks were due to their Manager (Mr. Fred Lee). The Chairman (Mr. Hurst) commented upon the energy and foresight of the Manager, who was accorded a vote of thanks.

GAS REGULATION ACT, 1920.

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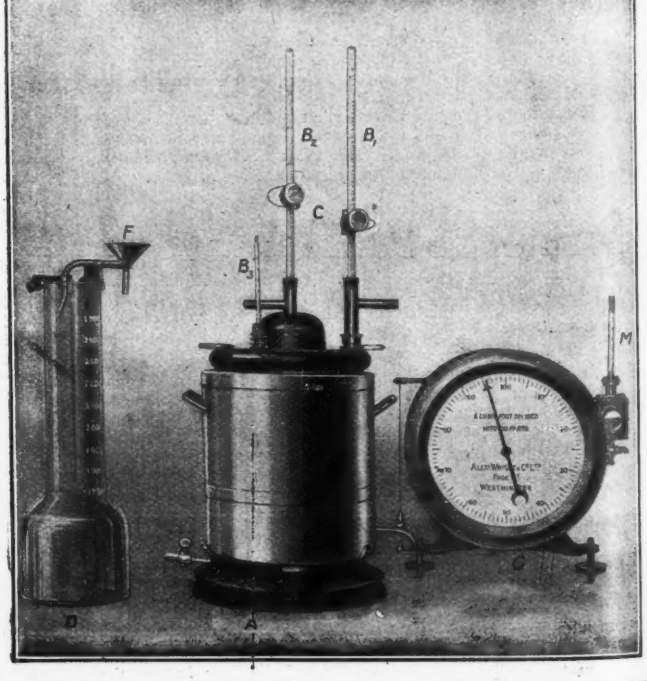

Gas Exhibition at Denton.

The advantages of cooking by gas were ably demonstrated last week at Denton, where an extremely well-arranged exhibition was held in the Co-Operative Hall, Ashton Road. People who still cling to the use of the coal range for cooking and water heating responded to the Gas Department's invitation in large numbers, while others whose gas equipment is out-of-date or insufficient for growing needs also evinced a gratifying interest. The exhibition was arranged by the Denton Urban District Council Gas Department; and prominent on the stand were Richmond's popular "Bungalow" cookers, as well as Wilsons & Mathiesons' cookers and their famous "Sunbeam" gas grates. A very complete and comprehensive display of apparatus which may be had on special cash or hire-purchase terms was tastefully set-out; and many of the appliances were shown fitted and in operation. Cookery lectures were given each afternoon and evening throughout the period of the exhibition, from June 15 to 19. These lectures and practical demonstrations proved a very popular feature of this "Gas Week" in Denton.

Eastbourne Gas Company's Loan Capital.—We understand that the £50,000 of 5 p.ct. debenture stock in the Eastbourne Gas Company recently advertised in our columns was fully subscribed, and that several of those who tendered at the minimum price of £95 p.ct. failed to obtain a full allotment. We are informed that the average price realized was £96 10s. p.ct.

Barrow Gas Undertaking.—At a meeting of the Barrow Town Council on Monday, June 8, Alderman R. Thompson, Chairman of the Gas and Water Committee, gave the annual statement upon the working of the undertaking, which, he pointed out, had a capital account of three-quarters of a million. There had been an increase in the quantity of gas sold of 19,932,000 c.ft., equal to 7 p.ct.; the total quantity sold being 303,907,000 c.ft. The number of gas cooking stoves in use at the end of the financial year was 101 in excess of the previous year; the total now being 10,324. The report was unanimously approved; and in reply to a question, Alderman Thompson said that gas would be supplied to the residents in Vickerstown, Walney Island, as soon as the necessary arrangements had been completed.

Torquay Gas Company's Carbonizing Plant.—Major R. P. Kitson presided last Wednesday at an extraordinary meeting of the Torquay and Paignton Gas Company, when the Directors sought sanction to create and issue debenture stock to the amount of £53,310. The Chairman explained that the money was primarily required in connection with the erection of vertical retorts in place of the horizontal settings. By reason of the amalgamation of Paignton with Torquay, it had been decided to discontinue the manufacture of gas at the Paignton works, and to instal larger carbonizing plant at the Torquay works. The Company would not only obtain increased results, but the installation of vertical retorts would improve the amenities of the neighbourhood. The progress of the Company continued to give great satisfaction to the Directors; the reports being always of increased consumption. The shareholders sanctioned the Directors' proposals.

Truro Gas Company and Electricity.—The Truro Corporation, who had an electricity scheme of their own under consideration for a long while, and finally rejected it, have had a number of offers from private undertakings to supply the city with electricity. Several of these were placed before the Town Council last week, when it was decided to refer them to the Electric Lighting Committee. One of the offers was from the Truro Gas Company. This was to provide electricity within six months of obtaining the necessary authority, with power to the Corporation to purchase the undertaking, if they desired, after seven years. The price to be charged for lighting purposes would be 10d. per unit, and for power 5d. per unit, with authority to allow discount for large consumption or for current used for special purposes. They stated that the only hope for an economic supply was for it to be generated and distributed by the existing gas undertaking. Mr. E. J. Larch (the Chairman of the Electric Light Committee) said the Gas Company's offer was reasonable, but they should consider whether the general position had altered since 1913, when they fought the Gas Company over the Provisional Order.

The Burnley Gas Engineer (Mr. J. H. Clegg) has been authorized to visit the Continent for the purpose of inspecting in operation a Sulzer plant for the dry cooling of coke.

Blackpool Gas-Works report an increase for the four weeks ended June 17, the output being over 69¼ million c.ft.—an increase of 4¾ millions on last year. The increase is equivalent to 7·31 p.ct. During May, 133 new gas consumers were connected.

In connection with the proposed purchase of the local gas undertaking, the Towyn Urban District Council are appointing a gas expert who will make a full report upon the plant, mains, &c., of the Dysynni Gas Company at Towyn and Aberdovey, and prepare a valuation of the plant, machinery, &c.

Presentations followed presentations at a meeting of the members of the Luton Gas Company's First Aid Class on Wednesday last, the distribution of certificates, vouchers, and medallions awarded on the recent examination being followed by gifts of a different kind. Mr. William Phillips (the Secretary and Manager of the Company) presided, and the awards were presented by Mrs. Phillips. All the 21 entrants were successful, 2 receiving first-class certificates, 5 second-year vouchers, and the remaining 14 medallions which signified that they were fully efficient in first-aid work. Mrs. Phillips was also called on to make a presentation of a calendar to Dr. Archibald, in recognition of his services during the past three years. The Class Secretary (Mr. I. Scrivener) and the Instructor (Mr. F. Hucklesby) were given a silver rose bowl and tobacco pouch respectively. The presentation of a cheque for £2 2s. from the Gas Company to the local brigade of the St. John Ambulance Corps was also made.

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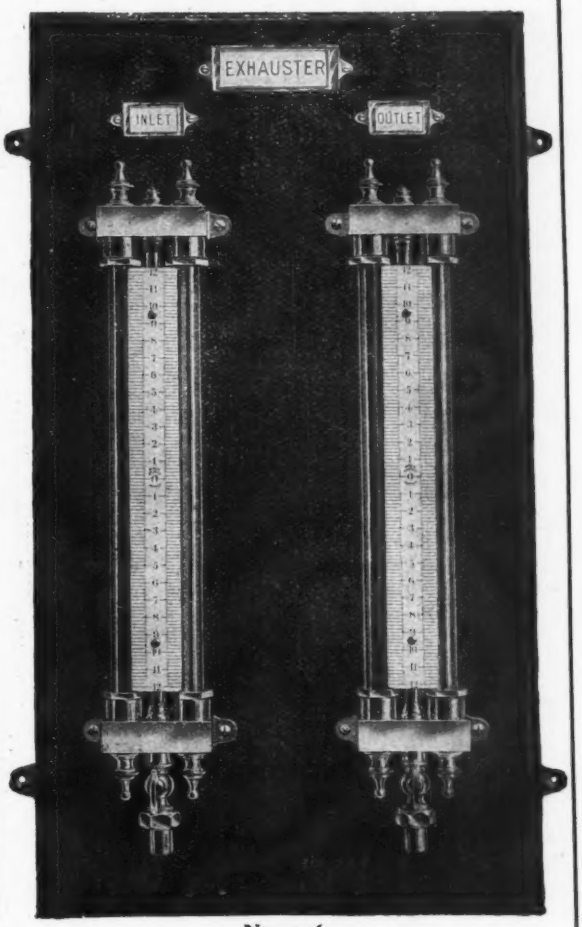

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STOCK MARKET REPORT.

THE Stock Markets last week were uncertain, the conditions of the industrial and financial circles doubtless contributing thereto. The position is not likely to be improved by the new issues announcements of the current week, which totalled to the sum of over £6,000,000, the principal of which is the Union Cold Storage issue of £3,220,000 6 p.ct. preference shares. Prices, especially of gilt-edged stocks, continued to fall, and interest displayed in any one section was speedily dissipated by a volume of sellers.

Home Rails, however, exhibited a distinct change for the better on the more hopeful reports with regard to the labour problems. Great Western, Midland and Scottish, North Eastern, and Southern stocks improved from 3 to 5 points. Industrials, on the other hand, were more varied. Reports from the different centres show that although there is a good deal of disorganization and uncertainty in some industries, others are doing exceptionally well, as for instance the artificial silk industry. Tobaccos were reactionary, and Rubbers slowed-up on profit-taking sales.

There was a normal number of transactions in the Gas Market, and the changes in the quotations were unimportant. The Sheffield three stocks were marked up 1 point; but British ordinary and Liverpool ordinary fell 1 and 1½ points respectively. It will be noticed that the Bombay £5 shares, which have been split-up into £1 shares, are now quoted in the list at an average of par. This adjustment of the face value will probably bring about an improvement in the market value of the shares, which on an 8 p.ct. dividend are an attractive investment.

The following transactions were recorded during the week.

On Monday, Bombay 5, 5⅛, Bournemouth "B" 12$\frac{9}{16}$, 12$\frac{11}{16}$, 3 p.ct. debenture 58¾, Brentford "A" 95, Brighton and Hove "A" 124½, 125, British 110, Commercial 3½ p.ct. 86, Continental Union 7 p.ct. preference 87¾ *ex* div., European 7⅛, Gas Light and Coke 83½, 83⅝, 83¾, 84, 84¼, 3½ p.ct. maximum 62, 62⅛d., 4 p.ct. preference 78½, 78¾, 79, 3 p.ct. debenture 59½ *ex* div., Imperial Continental 145⅛, 146, 147½, Lea Bridge 98, Malta and Mediterranean 88s. 9d., 91s. 3d., Montevideo 67, 67⅛ *ex* div., Plymouth and Stonehouse 111, Primitiva 8s. 9d., 9s., 9s. 3d., 9s. 4½d., South Metropolitan 93¼, 93⅜, 94, 3 p.ct. debenture 59½, 61, South Suburban 5 p.ct. 94, 96, 5 p.ct. debenture 98½, Wandsworth (Wimbledon Stock) 105. Supplementary prices, Bath 5 p.ct. debenture 95½.

On Tuesday, Alliance and Dublin 65, Brentford 5 p.ct. preference 95, Gas Light and Coke 83½, 83⅝, 84, 84¼, 3 p.ct. debenture 59½, 59⅝ *ex* div., Imperial Continental 145, 145¼, 145⅛, 146½, Montevideo 67 *ex* div., Portsea Island "C" 97½, 98, "D" and "E" 80½, 81, Primitiva 9s., 9s. 6d., South Metropolitan 94½. Supplementary prices, Sunderland 6 p.ct. maximum 104¼.

On Wednesday, Alliance and Dublin 65, 65⅞, Cardiff 104, European 7$\frac{13}{16}$, 7⅞, Gas Light and Coke 83¼, 83⅜, 84, Imperial Continental 145, Montevideo 68 *ex* div., Oriental 104, 104⅛, 104¾, Primitiva 9s. 4½d., 9s. 9d., 9s. 10½d., 4 p.ct. (River Plate) debenture 66½, 66¾, South Suburban 5 p.ct. 94, 95, Tottenham 5½ p.ct. preference 104½. Supplementary prices, British Norwich 3½ p.ct. mortgage debentures 63½.

On Thursday, Continental Union 35, Gas Light and Coke 83$\frac{7}{8}$, 83$\frac{15}{16}$, 83$\frac{15}{16}$, 84, 84¼, 3½ p.ct. maximum 62, Hastings and St. Leonards 5 p.ct. converted 95, 95½, Imperial Continental 144, North Middlesex 118, Primitiva 9s. 6d., 9s. 10½d., 10s., South Metropolitan 93½, 93$\frac{7}{8}$, 93$\frac{15}{16}$, 6½ p.ct. debenture 103, 103½, Swansea 7 p.ct. preference 103½. Supplementary prices, Barnet "C" 147½, East Grinstead "A" 12⅜, 13, Mid-Kent 54s.

On Friday, Alliance and Dublin 65, Commercial 86, 86½, Gas Light and Coke 83½, 84, 84¼, 4 p.ct. preference 78⅜, Montevideo 67¼ *ex* div., Oriental 103, Primitiva 10s., South Metropolitan 93½, 94, 94⅛, 94½, Tottenham "B" 94, 96. Supplementary prices, Barnet "B" 145.

Financiers are still in doubt about the ultimate effect of the restoration of the Gold Standard. So far, with no increase in the Bank Rate and an increase in the stock of gold, all appears to have gone well. During the past week money was in plentiful supply. Over the week-end the rate for loans was 3½ p.ct., but old day-to-day loans were renewed at 3½ p.ct. The result of the Treasury Bill allotment showed a rise of nearly 5d., to £4 8s. 3·35d. p.ct.

The feature of the Foreign Exchange Market was the inexplicable slump in the Italian exchange; but assisted by New York buying at the end of the week, the rate recovered slightly, and finally closed at 129 lire. The Paris cheque displayed more firmness and closed at 102.62½, and Belgian francs at 103.90. Sterling on New York rose slightly to 4.86.

The Silver Market was very quiet, and the price for cash—31$\frac{11}{16}$d. per oz.—was unaltered. Gold remained firm at 84s. 11½d. per oz.

The Bank Rate is 5 p.ct., to which it was raised from 4 p.ct. on March 5. Bankers' deposit rates are 3 p.ct. The deposit rates of the discount houses are 3 p.ct. at call and 3½ p.ct. at notice.

Issue.	Share.	When ex-Dividend.	Dividends. Prev. Hf. Yr.	Dividends. Last Hf. Yr.	NAME.	Quotations. June 19.	Rise + or Fall − on Week.	Transactions Lowest and Highest Prices.
£			% p.a.	% p.a.				
171,978	Stk.	Feb. 5	5	5	Aldershot 5 p.c. max. C.	78—81	..	..
295,492	"	"	4	4	Do. 4 p.c. Pref.	71—76	..	..
1,331,868	"	Apl. 2	6½	6½	Alliance & Dublin Ord.	65—70	..	..
374,000	"	Jan. 8	4	4	Do. 4 p.c. Deb.	63—68	..	65—65½
300,000	1	May 7	1/7⅛	1/7⅛	Bombay, Ltd.	⅛—1⅛	..	..
170,000	10	Mar. 5	8½	8½	Bournemouth 5 p.c.	12—13	..	..
425,050	10	"	7	7	Do. B 7 p.c..	12½—12¾	..	12$\frac{9}{16}$—12$\frac{11}{16}$
150,000	10	"	6	6	Do. Pref. 6 p.c..	11—12	..	..
50,000	Stk.	Jan. 8	3	3	Do. 3 p.c. Deb..	56—59	..	..
162,025	"	"	4	4	Do. 4 p.c. Deb..	78—81	..	58½
992,045	"	Mar. 5	6$\frac{3}{10}$	6$\frac{3}{10}$	Brentford A Con.	95—100	..	..
990,500	"	"	6½	6½	Do. B New	95—100	..	95
76,000	"	"	5	5	Do. 5 p.c. Pref.	95—98	..	..
306,690	"	June 11	4	4	Do. 4 p.c. Deb.	75—80*	..	95
181,337	"	"	6	6	Do. 6 p.c. Rich. Red. Deb.	100—105*	..	..
214,740	"	Mar. 5	11½	12½	Brighton & Hove Orig.	165—170	..	..
244,200	"	"	8½	9½	Do. A Ord.	122—125	..	124½—125
1,287,500	"	Feb. 19	5	5	Bristol 5 p.c. max..	96½—97½*a*	..	..
855,000	"	Mar. 19	8	7	British Ord..	109—114	−1	110
100,000	"	Dec. 18	7	7	Do. 7 p.c. Pref..	123—128	..	..
120,000	"	"	4	4	Do. 4 p.c. Red. Deb..	72—77	..	..
100,000	10	May 21	6	8	Cape Town, Ltd.	6½—7½	..	..
100,000	10	Apl. 23	4½	4½	Do. 4½ p.c. Pref..	6—7	..	..
150,000	Stk.	Dec. 18	4½	4½	Do. 4½ p.c. Deb..	71—76	..	..
626,860	"	Feb. 19	6	6	Cardiff Con. Ord.	101—104	..	..
237,860	"	Jan. 8	7½	7½	Do. 7½ p.c. Red. Deb.	104—107	..	104
157,150	"	Feb. 19	5	6½	Chester 5 p.c. Ord.	85½—94½*b*	..	..
1,513,280	"	Mar. 5	6	5/14/8	Commercial 4 p.c. Cap.	86—89	..	..
560,000	"	"	6	5⅞	Do. 3½ p.c. Cap.	86—89	..	86—86½
475,000	"	June 11	3	3	Do. 3 p.c. Deb.	56—59*	..	86
800,000	"	14 Jan. 15	—	—	Continental Union, Ltd.	34—39	−1	..
200,000	"	June 11	7	7	Do. 7 p.c. Pref.	85—89*	..	35
660,000	"	Mar. 5	6½	6½	Croydon sliding scale	98—102	..	87½
284,975	"	"	5	5	Do. max. div.	83—86	..	..
492,270	"	Feb. 19	6	5	Derby Con.	110—112*c*	..	..
55,000	"	Jan. 8	4	9	Do. Deb.	74—76*c*	..	..
1,002,180	1	Jan. 22	6	4	European, Ltd.	6¾—7⅞	..	..
16,460,070	Stk	Feb. 19	5½	4	Gas Light & Coke 4 p.c. Ord.	83—85	..	7⅞—7⅞
2,600,000	"	"	3½	5½	Do. 3½ p.c. max.	62—63	..	83⅜—84¼
4,062,235	"	"	4	3½	Do. 4 p.c. Con. Pref.	78—80	..	62—63¼
4,761,930	"	June 11	3	4	Do. 3 p.c. Con. Deb.	58—62*	..	78⅛—79
130,000	"	—	10	3	Do. 10 p.c. Bonds	..	..	59⅛—59⅜
42,000	"	—	7½	10	Do. 7½ p.c. Ilford Deb.	..	..	..
82,500	"	Mar. 19	6½	7½	Hastings & St. L. 5 p.c. Conv.	92—97	..	..
258,740	"	"	5½	6½	Do. 3½ p.c. Conv.	73—78	..	95—95½
70,000	10	May 7	10	5½	Hongkong & China, Ltd.	17—18	..	..
86,600	Stk.	Mar. 5	10	10	Hornsey 7 p.c.	136—141	..	..
1,976,000	"	May 21	10	10	Imperial Continental Cap.	144—149	−1	..
263,950	"	Feb. 5	3½	59	Do. 3½ p.c. Red. Deb.	71—74	..	144—147½
235,242	"	Mar. 19	6½	3½	Lea Bridge 5 p.c. Ord..	96—101	..	..
2,127,340	"	Feb. 19	5½	6½	Liverpool 5 p.c. Ord.	86—87*b*	−1½	98
600,000	"	Mar. 19	7	5½	Do. 7 p.c. Red. Pref.	103½—104½*b*	..	..
165,736	"	Feb. 19	8	7	Maidstone 5 p.c. Cap.	122—132	..	..
63,480	"	Dec. 18	3	8	Do. 3 p.c. Deb..	53—58	..	..
75,000	5	Dec. 4	7	3	Malta & Mediterranean	4½—4¾	..	..
541,920	Stk.	June 11	4	5	Montevideo, Ltd.	65—69*	+1	88/9—91/3
2,061,315	"	Mar. 5	5	4	Newcastle & Gateshead Con.	75—77*d*	..	67—68
300,929	"	"	4	5	Do. 4 p.c. Pref..	76—77*d*	..	..
329,705	"	Dec. 18	3½	4	Do. 3½ p.c. Deb.	68½—69½*d*	..	..
15,000	"	Mar. 5	11	3½	North Middlesex 10 p.c.	..	..	..
75,940	"	"	7$\frac{7}{10}$	12	Do. 7 p.c.	..	..	118
300,000	Stk.	May 7	9	8½	Oriental, Ltd.	100—105	..	..
188,120	"	Jan. 8	7¼	7	Plym'th & Ston'house 5 p.c.	110—115	..	103—104½
60,000	50	Mar. 5	13	7½	Portsea Island B	96—99	..	111
100,000	50	"	12	14	Do. C	93—98	..	..
2,289,909	1	—	—	13	Primitiva Ord.	9/3—10/3	+/3	97½—98
311,100	100	June 2	4	—	Do. 4 p.c. Red. Deb..	78—80	..	8/9—10/-
600,000	Stk.	Jan. 22	4	4	Do. 4 p.c. Red. Deb. 1911	64—66	..	..
220,335	"	Dec. 18	4	4	Do. B. Aires 4 p.c. Rd. Db.	65—67	..	..
321,070	"	"	4	4	Do. R'r P'te 4 p.c. Rd. Db.	65—67	..	..
150,000	10	Mar. 19	6	4	San Paulo 6 p.c. Pref.	7½—8½	..	66½—66½
125,000	50	Jan. 2	5	6	Do. 5 p.c. Red. Deb.	43—46	..	..
270,000	Stk.	Mar. 19	5½	5	Sheffield A	104—106*e*	..	..
419,968	"	"	5½	5½	Do. B	104—106*e*	÷1	..
1,047,000	"	"	5½	5½	Do. C	104—106*e*	+1	..
90,000	10	June 11	6	5½	South African	7—9*	+1	..
6,609,895	Stk.	Feb 19	5	4	South Met. Ord.	93—95	..	..
1,895,445	"	Jan. 8	3	6½	Do. 3 p.c. Deb.	59—62	..	93⅝—94½
734,000	"	Mar. 5	6½	3	Do. 6½ p.c. Red. Deb.	102½—104½	..	59½—61
91,500	"	Mar. 5	8½	6½	South Shields Con.	135—136*d*	..	103—103½
1,187,795	"	Feb. 19	6½	8½	South Suburban Ord. 5 p.c.	94—97	..	..
368,837	"	Dec. 18	5	6½	Do. 5 p.c. Deb.	97—100	..	94—96
647,740	"	May 7	5	5	South'mpt'n Ord. 5 p.c. max.	80—83	..	98½
121,275	"	Dec. 18	4	5	Do. 4 p.c. Deb.	72—77	..	..
250,000	"	Mar. 5	7	4	Swansea 7 p.c. Red. Pref..	102—104	..	..
200,000	"	Dec. 18	6½	7	Do. 6½ p.c. Red. Deb..	103—105	..	103½
120,000	"	Feb. 19	8	6½	Tottenham District A 5 p.c.	116—119	..	..
882,275	"	"	6½	8	Do. B 3½ p.c.	93—98	..	..
150,000	"	—	—	6½	Do. 5½ p.c. Pref.	103—105	..	94—96
181,255	"	June 11	4	—	Do. 4 p.c. Deb.	76—79*	..	104½
258,251	"	Mar. 19	5	4	Tynemouth Con. and New	74—76*d*	..	..
197,294	"	Feb. 19	6½	5	Uxbridge, Maidenhead, & Wycombe 5 p.c..	95—100	..	..
88,330	"	"	5	6½	Do. 5 p.c. pref.	95—100	..	..
91,800	"	"	—	5	Do. 5 p.c. Maidenh'd	90—95	..	..
30,000	"	Mar. 5	9½	6½	Wandsworth, Wimbledon, and Epsom—			
255,636	"	"	7½	9½	Wandsworth A 5 p.c.	130—135	..	..
392,955	"	"	6/9/6	7½	Do. B 3½ p.c.	110—115	..	..
352,000	"	"	7½	6/9/6	Do. C and New	95—100	..	..
98,000	"	"	7½	7½	Wimbledon 5 p.c.	105—110	..	..
88,416	"	Dec. 18	3	7½	Epsom 5 p.c..	112—117	..	105
				3	3 p.c. Deb.	57—60	..	..

Quotations at :—*a*.—Bristol. *b*.—Liverpool. *c*.—Nottingham. *d*.—Newcastle. *e*.—Sheffield. * Ex. div.

GAS JOURNAL

LIGHT • HEAT • POWER • BYE-PRODUCTS

[Founded in 1849 as the "Journal of Gas Lighting."]

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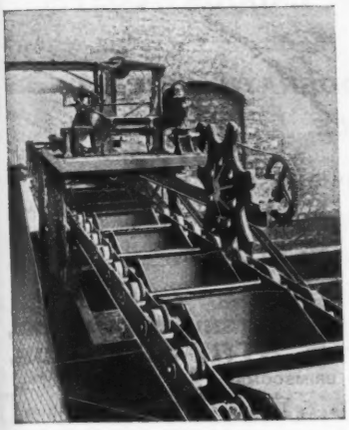

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MODERATE PRICE.
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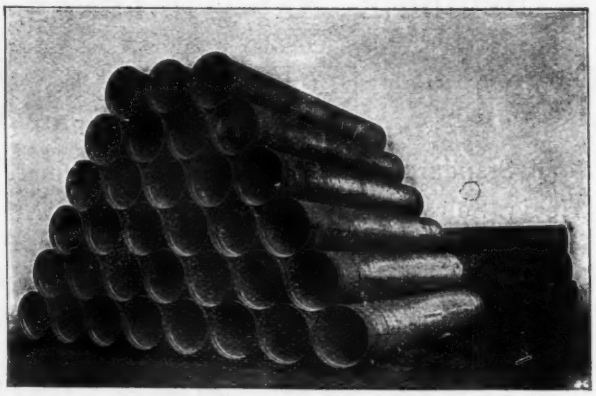
DIMENSIONS SUPPLIED ARE 14" DIAMETER AND UPWARDS, AND LENGTH 18 TO 26 FEET.



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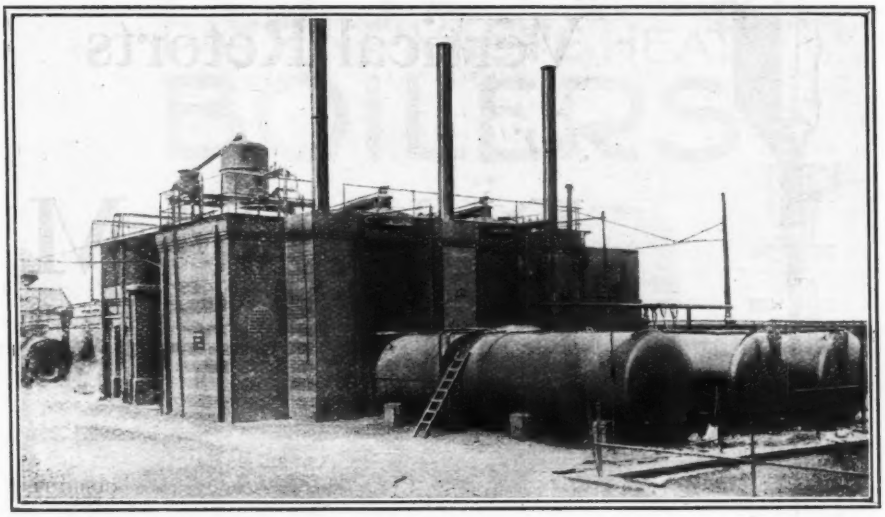

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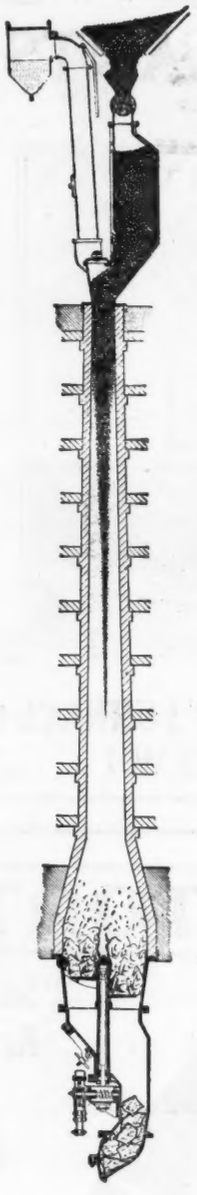

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	CUBIC FEET PER DAY
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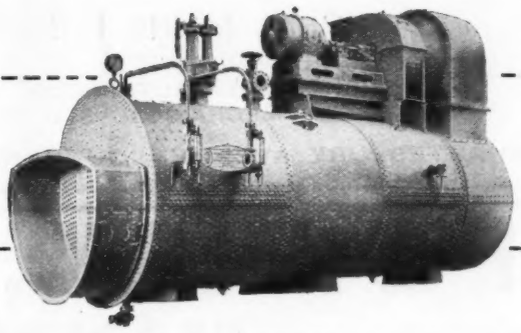
SPENCER-BONECOURT

KIRKE

PATENT WASTE HEAT

BOILERS

TUBE EFFICIENCY UP TO 94%.



British Waste Heat Boiler Patents Nos. 130234, 140851, 172752, 186801, 193895, etc.

No. 1. 1 TON STEAM *from* WASTE-HEAT FOR EVERY 1¼ TONS *of* COAL CARBONISED is being obtained from waste heat alone with Spencer-Bonecourt Kirke Patent Waste Heat Boilers.

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Pioneers in the manufacture of Slot Meters having the whole of the attachment accessible from the front.

This attachment (which is shown being fitted to a "Ranelagh" Meter at our Chelsea Works) is a slot mechanism of the highest efficiency and reliability. It is one of the chief reasons for the ever-increasing sales of the

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There are no change wheels and there are no loose screws or parts to become detached. Alterations in the price of gas are effected (from the front of the Meter) in a few seconds. The disc has a wide range, varying from 5 to 47 feet in the penny Meter, or 60 to 564 in the shilling type.

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Branches: Ranelagh Meter Works, East Park View, LEEDS.
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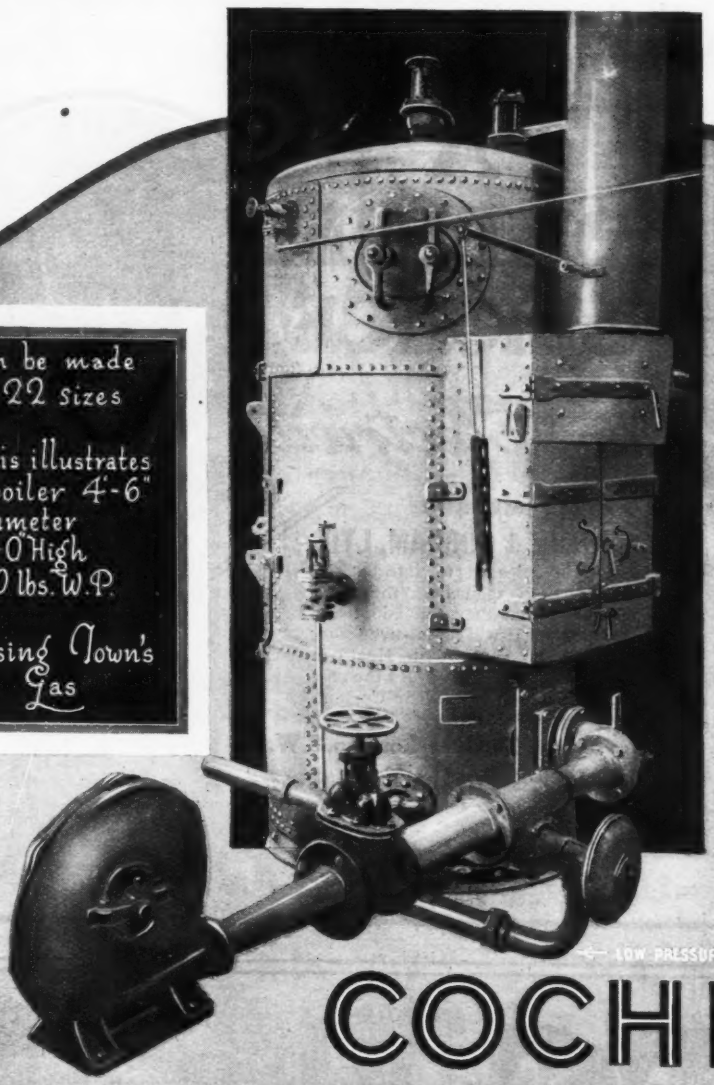

Can be made in 22 sizes

This illustrates a boiler 4'-6" diameter 10'-0" High 100 lbs. W.P.

Using Town's Gas

Actual tests on this boiler showed

Evaporation per hr. 1062 lbs.

Gas used per hr. (60°F. & 30" Hg.) 3378 cu. ft.

Temp. of Gases leaving boiler 403°F.

CO_2 content 11·3%

Burner Equipment supplied by BRITISH FURNACES LTD CHESTERFIELD

← LOW PRESSURE GAS SUPPLY

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GAS-FIRED BOILER

(WOODALL-DUCKHAM-COCHRAN SYSTEM)

The Woodall-Duckham Vertical Retort and Oven Construction Co., (1920) Ltd.

The Boiler combines all the well-known advantages of the Cochran Patent Vertical Multitubular Boiler over other boilers, with those inherent in the use of the well-known burner equipment supplied by British Furnaces Ltd., which may be briefly summarised as follows:- Saving in labour. No stoker is necessary, because the supply of gas is controlled by a governor, and the supply of water by an automatic feed regulator. There is no coal to cart to the site, no ashes to take away, and no storage space required. There is no smoke, soot, dust or dirt. The steam production can be regulated to suit demands, and when no steam is wanted, no fuel is being burned. The efficiency of the Boiler is constant at any rate of steaming.

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EFFICIENCY 88% NETT

Telegrams— "MULTITUBE ANNAN"

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Tubes FOR GAS SERVICES

More durable than Steel.

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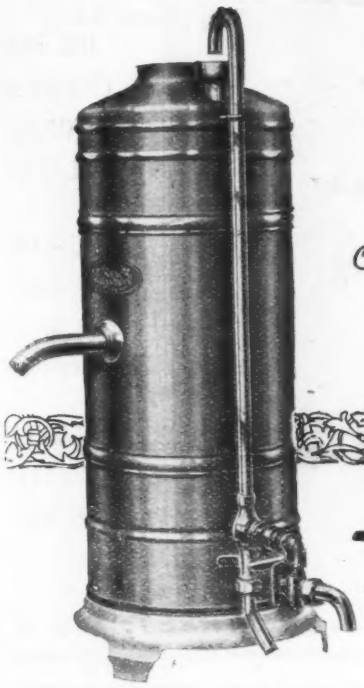
High-Grade: Efficient: Moderate in price—

the Davis

"Shamrock"



-the geyser to choose

The Davis "New Shamrock" Geyser is an improvement on the very popular "Shamrock" model. It is constructed on the "sealed" principle, of strong copper, polished and lacquered. Interior detachable and readily accessible, with waterways heavily tinned, and standardized parts. Efficient condensation arrangement. Body rotatable to place outlet in any position.—Send for illustrated price lists.

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The **Davis**

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RADIATION LTD. PROPRIETORS

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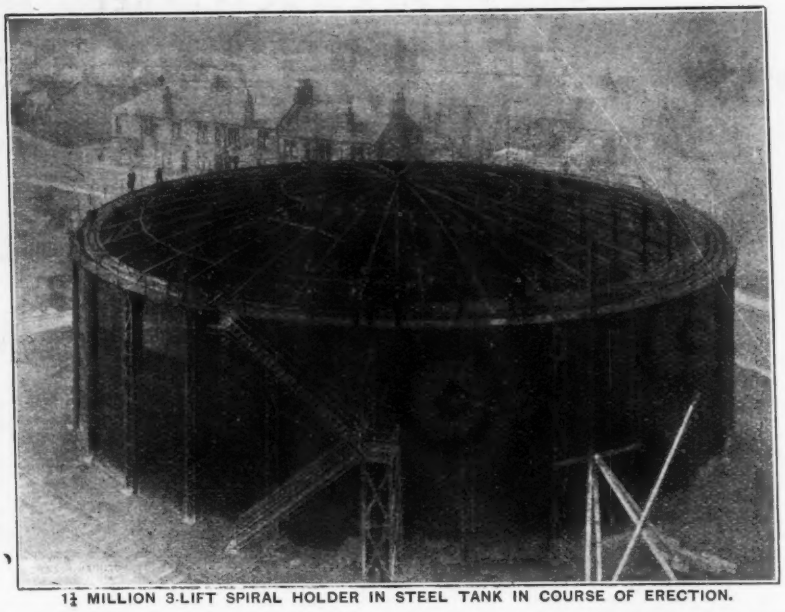

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Front View (cover removed).

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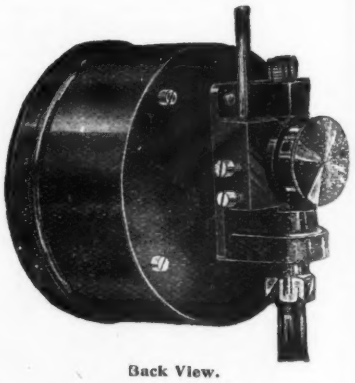

Back View.

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238, Kingsland Road, LONDON, E.2,

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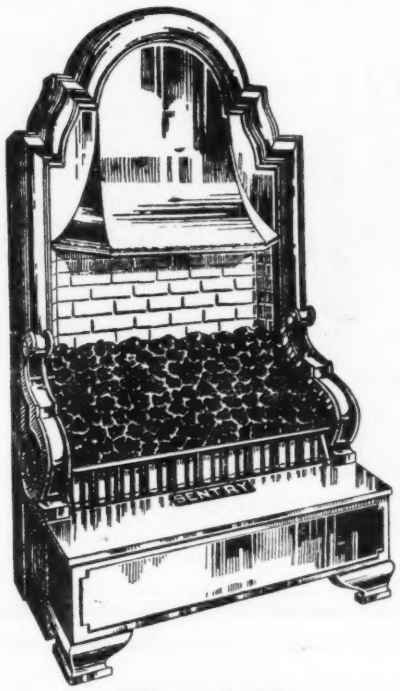
THE

SENTRY

REGD. TRADE MARK

GAS FIRES



THE 'SENTRY" SELF-CONTAINED GAS FIRE

A really efficient and attractive substitute to the traditional coal grate is to be found in the "SENTRY" Series of Gas Fires—made in three forms: Inset, Self-Contained, and Dog Grate.

The glowing mass of radiant fuel makes an immediate appeal to all users of Gas Fires, and perhaps what is more important, to the potential consumer who still clings to raw fuel in spite of the labour, dust, and dirt.

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The Self-Contained Fire, made in 12", 14", 16", and 18" sizes, has the appearance of a built-in fire, but is fixed by a fitter without the assistance of other tradesmen, which the built-in type frequently necessitates.

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We shall be pleased to place our exceptional knowledge of Constructional work at your disposal.

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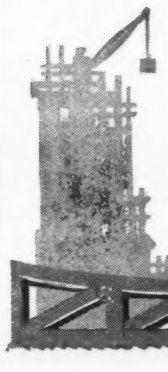

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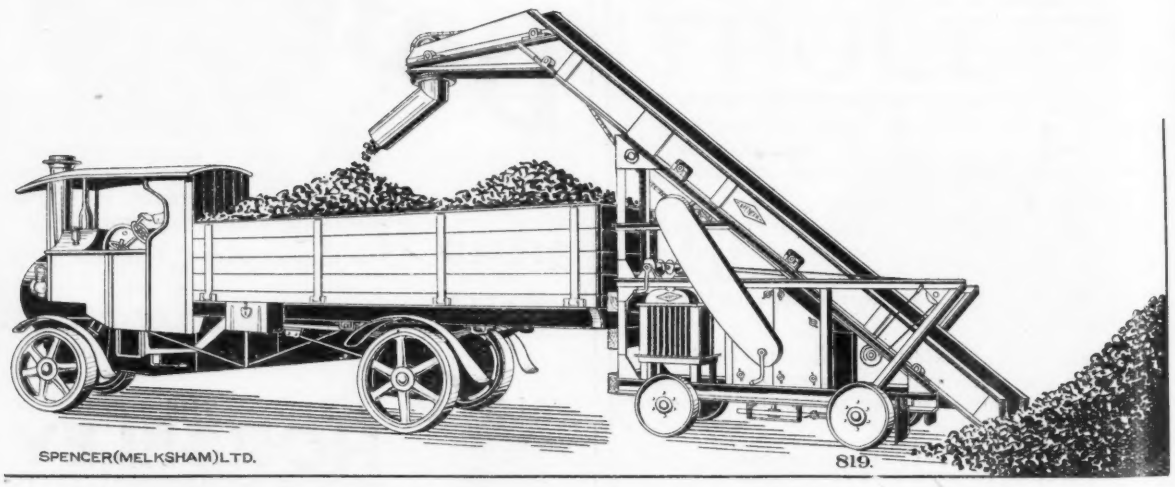
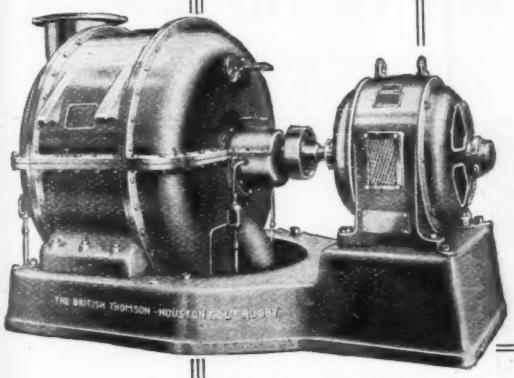


Spencer Automatic Loader for Coke, etc.

This Loader will handle coke from ground storage to motor wagons at minimum expense.

SPENCER (MELKSHAM) LIMITED
THE COAL HANDLING EXPERTS

Motor-driven Gas Exhausters



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Careful attention to all such details in design has reduced maintenance costs to a minimum, while ensuring constant and reliable service, even under the most strenuous conditions.

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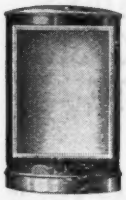

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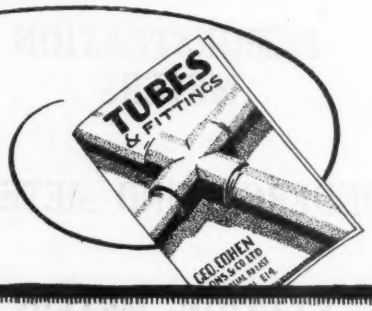

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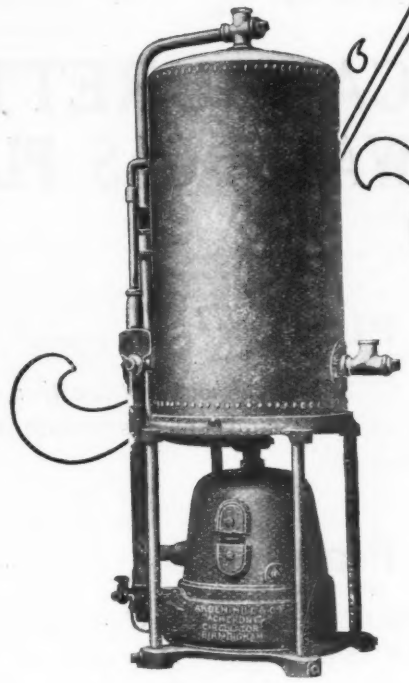

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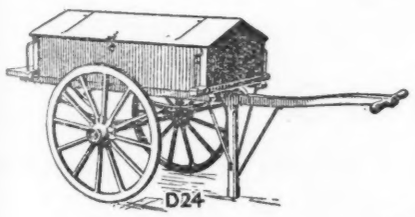

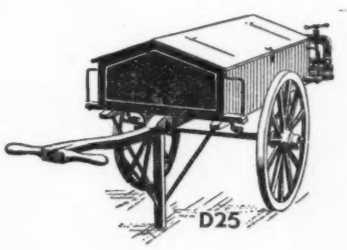

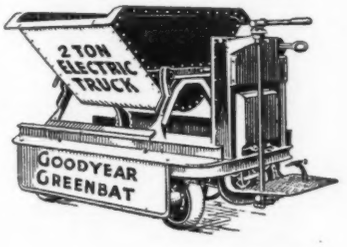

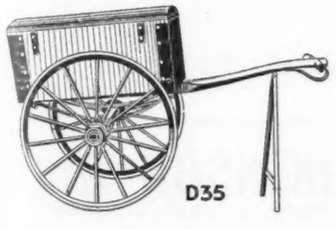

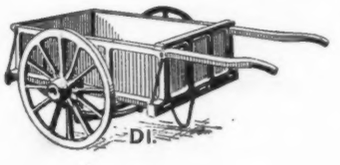

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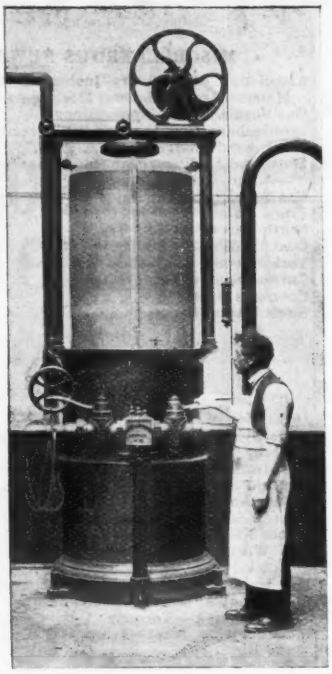

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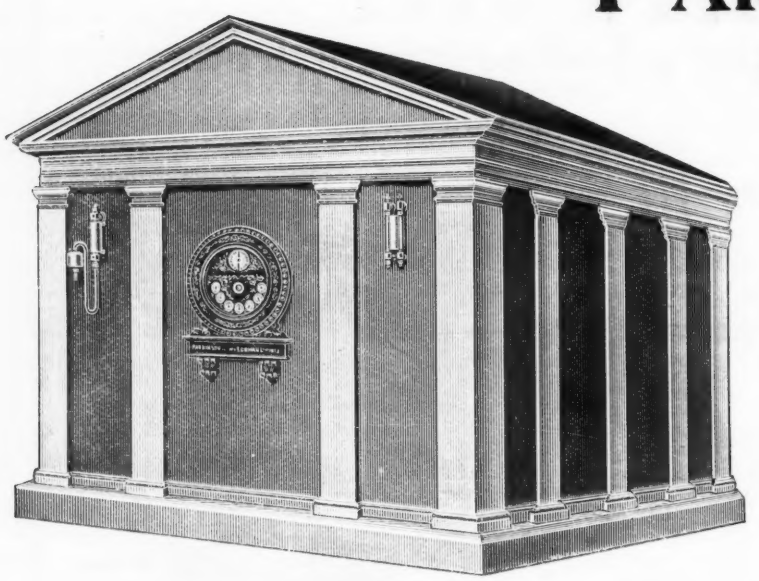

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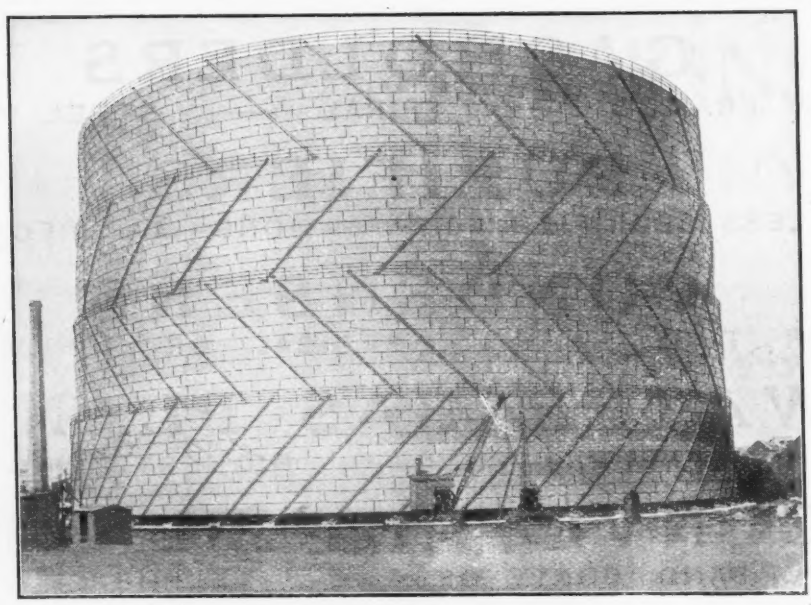

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THE above Company invite Offers for the Purchase of the following PLANT, in excellent Working Condition, shortly to be Dismantled (suitable for Works of an output up to 10 Million Cubic Feet per Annum): STATION METER, capacity 1500 cubic feet per hour. Direct coupled Vertical STEAM ENGINE and EXHAUSTER. LIVESEY WASHER, 8 Loop VERTICAL CONDENSERS, TOWER SCRUBBER, Four WATER LUTED PURIFIERS, Biggs-Wall CHARGING MACHINE, Twelve New RETORTS, 22 in. by 16 in. by 8 ft. 6 in., various STEAM PUMPS, &c.
Applications must be received on or before July 7, 1925.
Form of Tender, with Specification, may be obtained from the undersigned.

ALEC. E. WHITCHER,
Engineer and Manager.

GASHOLDER and Steel Tank, 10,000 c.ft. Capacity, with Cup for Telescoping, in good Condition, Cheap.
Apply No. 7557, "GAS JOURNAL," 11, BOLT COURT, FLEET STREET, E.C. 4.

WANTED—One 6-in. and one 8-in. Water Loaded or Spring Type STATION GOVERNOR without Bye-Passes or Connections. Must be equal to new.
Apply to the BROSELEY GAS AND COKE COMPANY, 6, CHURCH STREET, BROSELEY.

CONTRACTS OPEN.

URBAN DISTRICT COUNCIL OF COLWYN BAY AND COLWYN.

(GAS DEPARTMENT.)

TENDERS are invited for the Supply of COAL for Gas Making Purposes.
Particulars and Form of Tender can be obtained upon Application, in writing, from the Gas Engineer, Council Offices, Colwyn Bay.
Sealed Tenders, endorsed "Gas Coal," to be Delivered at the Office of the undersigned not later than 12 noon July 9, 1925.

JAMES AMPHLETT,
Clerk to the Council.

Council Offices,
Colwyn Bay,
June 22, 1925.

BOROUGH OF CLITHEROE.

(GAS DEPARTMENT.)

THE Gas Committee invite Tenders for the Supply of 8000 Tons of GAS NUTS, UNSCREENED COAL, and ROUGH DRY SLACK, to be Delivered on the Gas-Works Siding between the 31st of July, 1925, and the 31st of July, 1926.
Particulars and Forms of Tender may be obtained from the undersigned.
Sealed Tenders, endorsed "Tender for Gas Coal," addressed to the Chairman of the Gas Committee, to be Delivered at my office on or before Saturday, July 4, 1925.

R. BARRETT,
Engineer and Manager.

Gas-Works,
Clitheroe,
June 16, 1925.

BOROUGH OF MIDDLETON.

GAS PIPES.

THE Town Council invite Tenders for the Supply of 750 Yards of 6-in. CAST-IRON SOCKET and SPIGOT PIPES, with Turned and Bored Joints, in 12-ft. Lengths.
Specification and Form of Tender may be obtained from the Engineer, Gas-Works, Middleton, Lancs.
The Corporation do not bind themselves to accept the lowest or any Tender.
Tenders, endorsed "Gas Pipes," must be Delivered to the undersigned not later than Tuesday, July 7, 1925.

J. P. WALMSLEY,
Town Clerk.

Town Hall,
Middleton, Lancs.
June 16, 1925.

BOROUGH OF MIDDLETON.

(GAS DEPARTMENT.)

STEAM TUBES.

THE Town Council invite Tenders for the Supply of WROUGHT-IRON STEAM TUBES and FITTINGS for a period of Six Months, commencing Aug. 1, 1925.
Full Particulars and approximate quantities may be obtained from the Engineer, Gas-Works, Middleton, Lancs.
The Corporation do not bind themselves to accept the lowest or any Tender.
Tenders, endorsed "Steam Tubes," must be Delivered to the undersigned not later than Tuesday, July 7, 1925.

J. P. WALMSLEY,
Town Clerk.

Town Hall,
Middleton, Lancs.,
June 16, 1925.

LANCASTER CORPORATION.

(GAS DEPARTMENT.)

TENDERS are invited from Public Works' Contractors for EXCAVATING, LAYING, and RE-INSTATING 1500 Yards of 18-in. GAS MAIN, from Gas-Works to centre of Town.
Tenders to be sent to the undersigned by July 8 next.
Particulars and Specification may be had from

GEO. DIXON, B.Eng., A.M.I.C.E.,
Engineer and Manager.

Gas-Works,
Lancaster,
June 16, 1925.

HAVERHILL URBAN DISTRICT COUNCIL.

(GAS DEPARTMENT.)

TENDERS FOR COAL.

THE Haverhill Urban District Council invite TENDERS for the Supply of 1500 Tons of BEST GAS COAL (Screened or Unscreened) to be Delivered at the Haverhill (L. & N.E.R.) Station, in such quantities and at such periods as may be ordered from time to time, between the 31st day of July next and the 30th day of June, 1926.
No Form of Tender is provided, nor will be supplied.
The Council reserve the right to divide the Contract as they think fit, and do not bind themselves to accept the lowest or any Tender.
Sealed Tenders, endorsed "Gas," to be Delivered to me on or before the 15th day of July, 1925.

JAMES BEASLEY,
Clerk.

Haverhill, Suffolk,
June 19, 1925.

COMPANY NOTICES.

THE GAS LIGHT AND COKE COMPANY.

NOTICE is Hereby Given that the TRANSFER BOOKS of this Company, SO FAR AS THEY RELATE TO CAPITAL STOCKS, WILL BE CLOSED at 3 o'clock p.m. on Wednesday, the 1st day of July next, and will be RE-OPENED on the morning of Saturday, the 1st day of August next.
Dividends payable in respect of the half-year ending the 30th inst., will be remitted by warrant forwarded by post on the 31st of August, 1925, to those Proprietors who were the holders of Capital Stocks when the Transfer Books were closed, or their Authorized Agents.

By order,
WILLIAM LYLE GALBRAITH,
Secretary.

Chief Office:
Horseferry Road,
Westminster, S.W. 1,
June 16, 1925.

STOCK ISSUES.

By Order of the Directors.
NEW ISSUE OF ADDITIONAL ORDINARY CAPITAL.
THE WELWYN AND HATFIELD GAS COMPANY, LTD.

MESSRS. A. & W. RICHARDS
are Instructed to OFFER FOR SALE BY TENDER
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ranking equally with the existing similar Shares now receiving the Standard Dividend of 7 per cent. per Annum.

MINIMUM PRICE OF ISSUE, PAR.

Prospectus and Form of Tender (which latter must be sent in by 11 o'clock on Thursday, July 2), may be obtained of MESSRS. A. & W. RICHARDS, 37, WALBROOK, E.C. 4.

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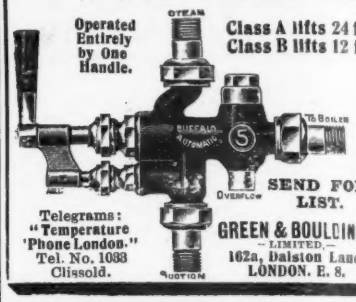

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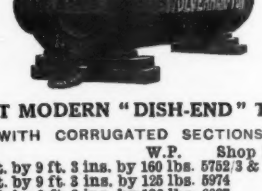

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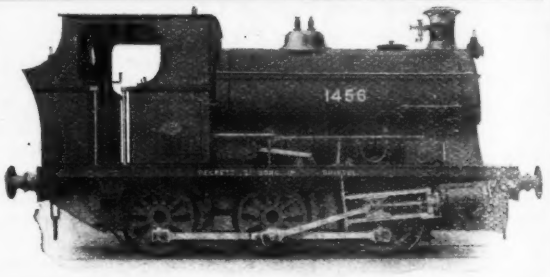

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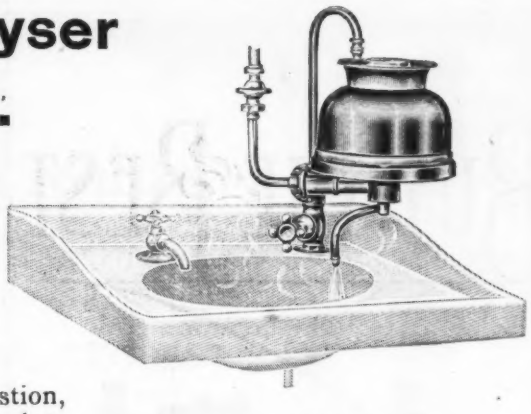

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The plumbing work necessary with all other sink Geysers is abolished. The "Hendon" is fitted to the Water Supply of any Lavatory Basin or Sink merely by screwing the connection to the Union Joint of the Tap, thus making a permanent fixture. It may be fitted in any position in relation to the Basin and Sink, the fitter only needing to arrange parts to suit requirements. When the Copper container becomes furred or needs cleaning, it may be detached immediately and another substituted while it is cleaned.

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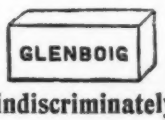
TRADE 

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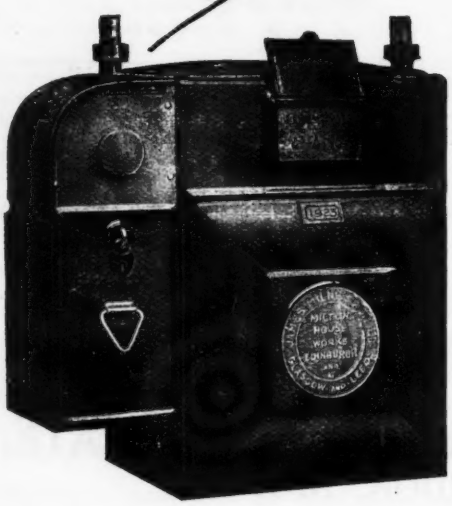

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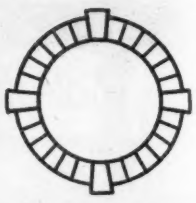

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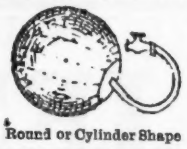
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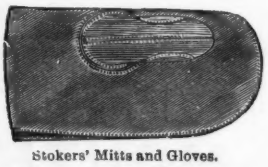
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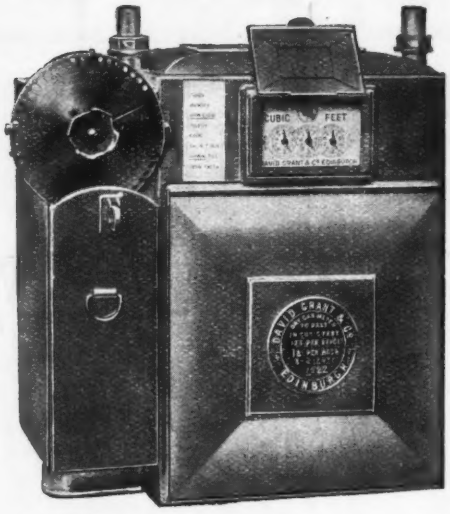

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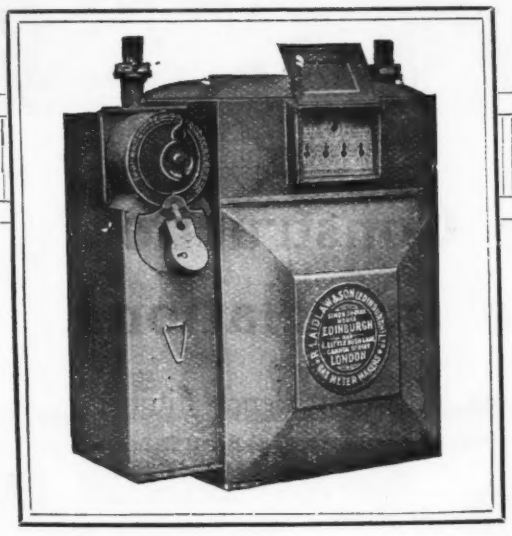

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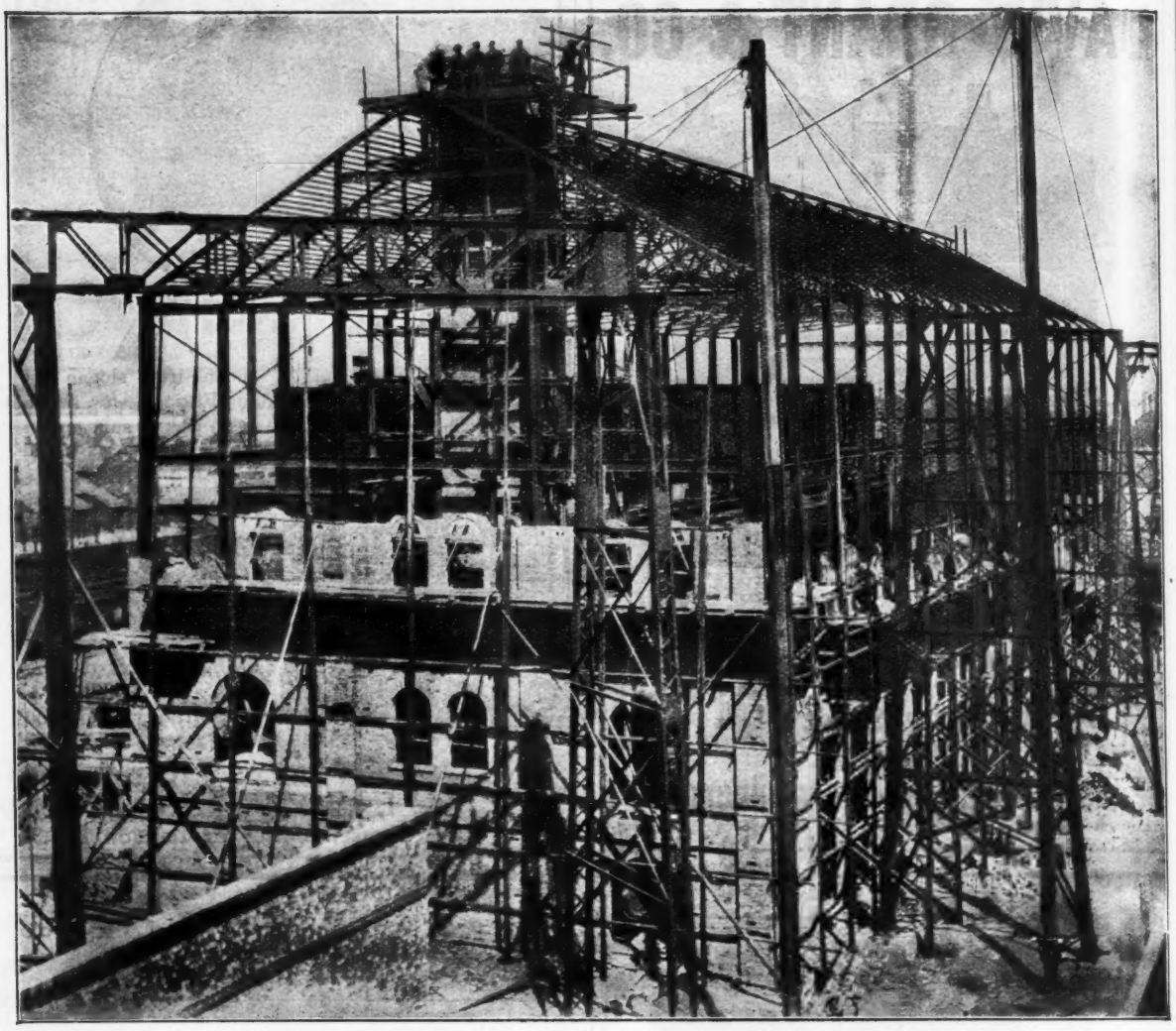

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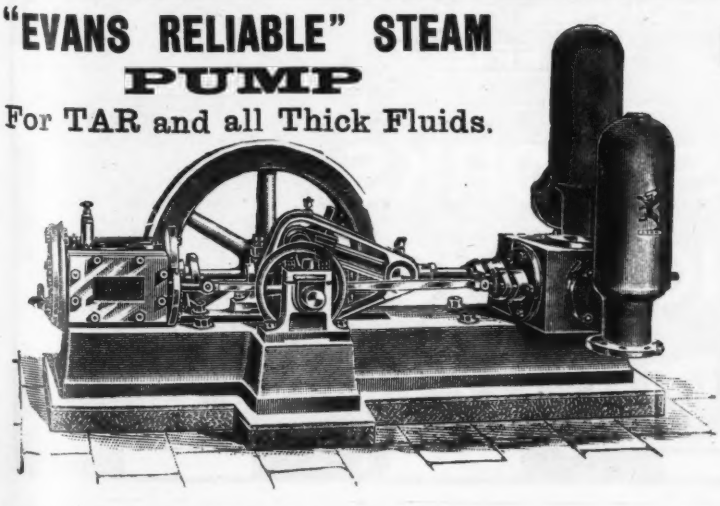

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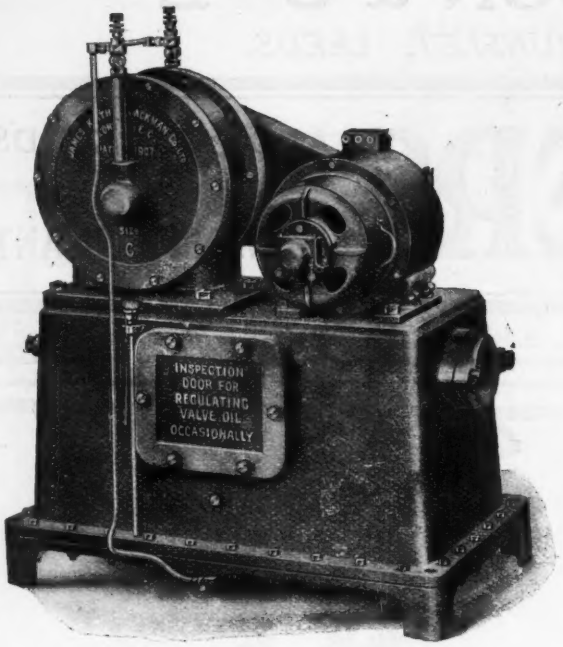

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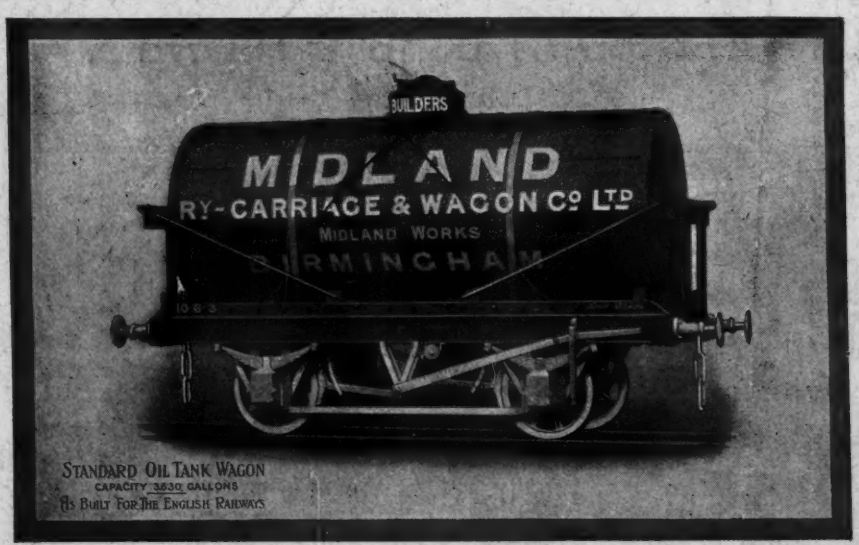

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